The Builder.

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NOVEMBER brings the first indications of the returning London season,—not of fashion, but of science, art, and literature,—and all the principal "societies" of the metropolis open again their closed up doors, for the periodical meeting, and the prosecution of their particular purpose:—

——"The public haunt,
Full of each theme, and warm with mixt discourse,
Hums indistinct."——

Last year was a period of much commotion in many associations, nor has it yet subsided. In the direction of the Royal Society are evidences of disturbance; in the Society of Antiquaries further efforts will be made to increase its efficiency; and in four or five of the younger societies, confidence and regularity are yet wanting. It will be our duty to chronicle their proceedings, so far as they may be instructive and useful, and, while we would wholly discourage groundless cavilling and personal bickerings, to assist every legitimate endeavour to remove abuses and increase their usefulness.

The Institute of Architects held their first meeting on Monday last, and the president, Lord de Grey, took the chair. At the close of last session, we expressed our dissent from certain proceedings of the council, and expressed a hope that some alterations would be made and a bolder and less confined policy adopted. This we still hope for. At the same time we would remind the members how much depends on them, and urge them individually, to give such assistance to the council as may be in their power; either by forwarding the results of their observation and reading, in the shape of papers, or proposing such questions for consideration, relating to the art and science of architecture, or professional practice, as may seem to need solution.

The meeting on Monday night was numerously attended, and Lord de Grey shewed the same interest in the progress of the society and good feeling towards the members, as have always animated him. Mr. George Allen, and Mr. Mayhew were elected fellows, and Mr. Charles Barry, Jun., an associate.

The Dean of Westminster offered for exhibition, a large model of Westminster Abbey, executed in cork by a young man who is a clerk in a merchant's counting-house.

Mr. Donaldson, in connection with the model, wished to draw the attention of the dean to an addition greatly required at the Abbey. He meant the spire, at the intersection of the nave and transept. While this was wanting, the Abbey would always appear unimportant amongst the fine buildings by which it was being surrounded. It had been said that the piers were not strong enough to carry a spire; but surely this was not insurmountable: they might be taken down and reconstructed; and he felt sure, for such a purpose, a subscription might easily be raised to supply the required funds. By the addition of the spire, the Abbey would be distinguished from the parliamentary buildings, where there are lofty towers but no spire. He hoped, with the aid of the dean, the Abbey might soon receive its crowning glory.

The dean said this was contemplated in the time of Christopher Wren; but the flexure of the columns was so great, that it appeared to be dangerous to attempt it. The columns were of Purbeck marble, and he doubted if more could be obtained; moreover, if the piers were enlarged sufficiently to carry the spire, the proportions of the interior might be injured.

We should be glad if the objections urged by the very reverend doctor, were the only difficulties in the way, as we should then soon see the spire commenced, and have the proper outline of the building restored.

There are many other things required in the Abbey of easier accomplishment than this, and we do hope that Dr. Buckland, who is, very properly, ever ready with suggestions for the restoration and amendment of other buildings, will now look at home, and lend his aid to improve the abbey church of Westminster. Let him get rid of some of the monstrous specimens of bad stone-masonry which now disfigure and injure it, giving parts of it the appearance of a statuary's show shop rather than that of a Christian temple. The ancient monuments should be carefully looked to and maintained; and Henry Seventh's Chapel, both inside and outside, requires immediate attention. As regards the construction of the spire, we ought to be grateful that Wren, great artist as he was in other respects, was not commissioned to effect it; and almost equally so in the case of James Wyatt, who in later times also reported upon it. There would be much less chance of the removal of an incongruous disfigurement, such as would certainly have been placed there, than there is now of a spire being commenced. We would gladly contribute to remedy the mischief Wren did at the west end.

Among the donations received were drawings by Mr. Haviland, architect, of Philadelphia, of the Halls of Justice at New York, in the Egyptian style, and of the Pennsylvania State Penitentiary, "the first prison erected on the Haviland plan." What there is in it to entitle its author to claim the plan as his own, was not apparent. The general arrangement is on the principal of radiation from a central building.

Mr. George Mair then read a description of an ancient structure existing at Al Hather, in Mesopotamia, illustrated by drawings, and of the curious sculptured marbles recently discovered by Mr. Layard at Nimroud, the site of Nineveh. Mr. Layard's researches being regarded with considerable interest by many persons, and the results promising to be of considerable value, we give the whole of Mr. Layard's communication on the latter subject, and will, next week, in like manner, give his more architectural description of the Temple of Al Hather, as arranged by Mr. Mair. The letter is from Nimroud, near Mosul, dated 18th May, 1846, and is as follows:—

"I am now exploring Assyrian ruins, in the neighbourhood of Mosul, on the Tigris. I have been thus engaged since last November, and the *success* I have met with has exceeded my most sanguine expectations. I am at present digging out a palace which has probably been quietly reposing under ground from the time of Senacherib.

You may have heard of the French discoveries at Khorsabad, in this neighbourhood, which have created so much interest in Europe.* Mine is something after the same kind, only on a *much larger scale*.

To what city *this palace* belonged is doubtful: the large collection of mounds which now mark its site are called Nimroud; and the tradition of the present inhabitants of the country all point to that hero, and to Ashur, as the founders of the city. Modern travellers have believed the ruins to be that of Resen, one of the primitive cities mentioned in Genesis, and have identified Resen with *Larissa*, an Assyrian town mentioned by Xenophon. Indeed, *Nimroud has as good a claim to be identified with Nineveh*, as any other ruins in Assyria—PERHAPS A BETTER; and until I can make out the inscriptions I have discovered to my satisfaction, I shall consider them to be those of that celebrated capital of Assyria.

The mode of construction amongst the early inhabitants of Assyria appears to have been very simple. Slabs of marble, from 10 to 14 feet in height, from 1 to 2½ feet in thickness, and varying very considerably in width, were placed against an intervening wall of sun-dried bricks, generally about 6 feet in thickness. These slabs were covered with sculptures, sometimes historical, sometimes religious;—the former being battles, sieges, sea-fights, triumphs, representations of the monarch and his attendants, &c.; the latter, divinities of various shapes. Enormous symbolical figures frequently occur, such as bulls or lions with human heads, and with wings; these usually form the portals, and are carved out of one block of marble. I have a pair of such bulls, above 14 feet in length, and a pair of *lions*, 11½ feet. It would be difficult to convey an idea of the imposing effect they make. They form an entrance into a temple, into which I am now going to dig, and which I have already ascertained is covered with sculptures. Nothing so beautiful as these lions were discovered by the French; indeed, the sculptures at Nimroud far exceed those at Khorsabad, in the richness of detail and variety of subject.

The inhabitants of Assyria at that time probably exceeded all the nations of the earth in power, and riches, and luxury. Their knowledge of the arts is surprising, and their style I believe to be purely their own, and *not Egyptian*, as some would have it. There is as much difference between their sculptures and those of Egypt, as their exists between those of Assyria and Greece, and they held relative positions in point of knowledge of the arts. The lions lastly discovered, for instance, are admirably drawn, the muscles, bones, veins, quite true to nature, and portrayed with great spirit. There is also a great "*mouvement*" (as the French will term it), in the attitude of the animal and "*sa pose est parfaite*." The human head too is really grand!

It is curious that the artist has given the animal *five* legs. He has done this in order that when you look at him in *front* or at *the side*, he may appear to have the proper number, for although the figure is in relief, yet at the end of the slab it is in full. Between the legs are long inscriptions in the cunieform character.

Over the slabs appear to have been placed layers of *painted* and glazed bricks; the ornaments are exceedingly elegant, and the colours very brilliant; they are still in perfect preservation. It is difficult to conjecture how the roof was constructed, but it appears most probable that *only timber was used*, and that it was flat.

I have found many ornaments in ivory, copper, and a kind of porcelain which may have decorated the ceilings. The rooms were paved either with slabs of marble, with layers of bitumen, or with bricks. In all cases, however, there was a thick substratum of bitumen, and beneath the whole, a thick layer of fine sand.

Every slab of marble in the building, and there are some thousands, has an inscription, generally *on both sides*; this is the case *even with the pavements*.

There was only one story or rather only a ground-floor to the edifice, which was built on the summit of a lofty artificial mound. The inscriptions are in the cunieform, or arrow-headed character, such as was used in the earliest ages in Assyria and Babylonia. Of the precise date of the building, I can at present say no more, than that I am pretty certain that it must have referred to the time of the dynasty of the Assyrian kings, mentioned in chronicles and kings, and that it is not impossible that it may belong to an earlier period.

I am now working on a very small scale, and am anxiously waiting for orders from England, which may enable me to examine

* Mention of these discoveries has already been made several times in THE BUILDER.

these interesting remains as they deserve. I have, however, dispatched the following specimens on their way to England:—eight small bas-reliefs of battles, lion hunts, &c. (very beautiful); two large winged Divinities (one with an eagle's head), the head of one of the great bulls, and a portion of a slab, with the head of a king, and his attendant eunuch. They are all fine specimens.

I have been about twenty days occupied in packing and forwarding these antiquities, and have had to move immense blocks—some nearly nine feet square and one foot thick—of the most fragile material, and covered with delicate sculpture, without even a *rope* capable of sustaining an ordinary weight, and without any machinery. Many of the blocks have been sawn in various directions, to reduce them to a transportable size, and have been removed to the river in carts which in England would scarcely be used for carrying a load of hay. I have luckily succeeded in sending them all without accident. I trust you will one day see them in the British Museum. The finer sculptures—the great lions and fine bas-reliefs—remain in *statu quo*; I had no means of removing them. As I advance further into the mound, the sculptures become more perfect in preservation, and superior in execution. The discoveries are creating great interest; and every post brings me letters from parties wanting information, and offering (scientific) assistance.

Major Rawlinson, the British resident at Baghdad, in a letter to Mr. Layard, says:—"I look upon the *Nimroud* marbles as invaluable. They unfold to us the history, theology, language, arts, manners, military skill, political relations, &c., of one of the most illustrious nations of antiquity, and thus fill up an enormous blank in our knowledge of the early history of the world. I consider the discovery of these sculptures as more valuable than even Pompeii or Herculaneum, and view every new inscription as equal to gaining one of the lost decades of Livy." "I hope," says Mr. Layard, "the people at home will take the same view of the subject."

At the conclusion of Mr. Layard's paper, Mr. Tite said he was most anxious to direct the attention of the Government to the discoveries made by Mr. Layard, and to obtain for him that aid which he deserved. We owed much in England to individual enterprize, and that, too, on the part of non-professional men: he would instance Belzoni and Fellows, who had done so much. Mr. Layard was of the same class; he was a solicitor, travelling for his health; but by his enterprise and good judgment he had succeeded in making what must be considered some great discoveries. The remains which had been described referred to two different periods. As to those from Nimroud, it did not seem quite clear from what part they came; all the buildings there, however, were ascribed to Nimrod. The history of that period was well and briefly narrated by Gibbon, from whom he (Mr. Tite) then read some passages, to shew the degree of civilization early attained by the inhabitants of Asia.

The speaker continued: he did not consider these remains so ancient as Mr. Layard, but attributed them to the period of Cyrus and Darius. The French had been intent on the elucidation of this same period of history, and were exploring neighbouring ground, but had not been so successful as Mr. Layard.

As to Al Hather, it was one of those extraordinary cities, of which the rise, progress, and destruction, were alike mysterious. It was well known, but had not been investigated, the difficulties of access being great. Dr. Ross, in the ninth volume of the Transactions of the Geographical Society, gave a plan of the city.

From this plan, it was seen that the walls surrounding the city formed a circle, this was divided into two by a wall across the diameter; one-half was appropriated to the living, the other half to the dead, being the necropolis. The description given by Buckingham of another extraordinary city, Ctesiphon—probably agreed with Al Hather; and the account given by Gibbon of the sack of this city by Omar, might probably serve for an account of the destruction of Al Hather. He was most anxious that the exertions of Mr. Layard should be recognised by the Government, and that we should see the results of his labours in the British Museum.

The honorary secretary said, that he had learnt two days before, that the Government had already made an arrangement to reimburse Mr. Layard, that some of the marbles were on their way to this country, and that means had been provided for further investigation. We shall be truly glad to find it so, but at present are disposed to regard it as somewhat doubtful.

APPENDIX TO "ANNOTATIONS ON IRON."

Allusion having been made to the experiments of Messrs. Fairbairn and Hodgkinson on the strength of iron and the best form of girders (see p. 459), we think some additional particulars may be interesting. We also append extracts from answers to certain inquiries, made about the time the results of these experiments were published, from an individual who was well acquainted with their nature, and who had opportunities of witnessing their progress. The particulars of these experiments are to be found in the transactions of the British Association for the Advancement of Science, and in those of the Literary and Philosophical Society of Manchester, vol. v. Mr. Fairbairn's researches were, we believe, directed mainly to the comparative strength of different descriptions of iron, and to the effects of the hot and cold blasts. Mr. Hodgkinson directed his attention rather to the capabilities of the material to resist the different forces of tension, cross strain, and compression, and to ascertaining the form and proportion, which should be given to the material under particular circumstances. Our correspondent wrote:—"All I think it necessary to say with reference to these experiments is, that you must avoid making any reference to particular makes of iron, for it unfortunately happens that the results here shewn are not borne out in general practice. The fact was, that the use to which these samples were intended to be applied became so well known, that many parties, making very inferior iron generally, sent us samples of very first-rate strength and toughness." And in reference to the hot and cold blast iron, which are compared in our former article with decided disadvantage to the former, we find that we were advised as follows:—"Experience proves, as a *general* rule, that cold blast iron is stronger than hot; but this arises from the fact that the hot blast enables the maker to use an inferior material, which was formerly left on the bank, and was a dead loss; and very few are honest enough, or have sufficient resolution, to withstand the temptation. If the same materials be worked, the hot-air iron has a trifle the preference. The *prejudice* against the hot air is perfectly ridiculous, if the maker will but put proper materials into the furnace. Some stones and coal, however, will not bear the hot blast. Yorkshire iron, for instance, is greatly injured by it." On the form of section, and the effect of time in producing deflection of iron beams, the points which Mr. Hodgkinson investigated, he said:—"Time produces so little deflection in iron, provided it be only fairly weighted, as not to be at all worth notice."—"Dr. Young started a theory, upon which Tredgold, Bramah, and several foreign engineers made some very interesting experiments. They were very satisfactory as far as they went, but they ought to have tried greater weights, and then their whole theory would have proved itself futile. The beam, which Tredgold called the best, in his experiments, would have broken with a very trifling addition of weight; but he did not know that, because he did not try it. The resul from Tredgold's reasoning is, that the *elasticity* of cast-iron *remains perfect*, when a bar is not loaded with more than about 15,000 pounds per square inch, and this he calculates to be about one-third of the breaking weight; but in the late experiments at Mr. Fairbairn's, many bars of cast-iron were broken with a weight actually less than what Tredgold called his strongest point. In Mr. Hodgkinson's report to the British Association, I think it is shewn clearly that there is no 'elastic point' in iron."—Tredgold, Dulau, and others make it out, that a beam of any form will bear the same weight, which ever way it is turned upwards; the absurdity of which will be shewn by a simple example. A bar of cast-iron of the I section will carry three or four times as much weight, set in that manner, as it will when set thus T. All Tredgold's reasoning goes on the supposition, that the tensile and compressive strengths of iron are the same, which is, in fact, begging the whole question. Unless we have been most strangely and unaccountably deceived, in every one of our experiments, as to the breaking point, we have *invariably* found, that it takes six times as much pressure to crush cast-iron as to tear it asunder, and I therefore prefer that form of beam which has the lower edge the strongest, where the greatest pressure will always take place." Notwithstanding the result of the experiments abovementioned, we know that the I form of section is still persevered in by many; and it is much to be regretted that complete unanimity should not prevail in this very important matter. It is desirable that attention should still be directed to the subject, until it is completely set at rest by indisputable experiment. In many great works, iron is the most important material of any employed; and our pages have heretofore recorded instances of most disastrous failures. The writer above-quoted from, after saying that he has paid much attention to the question, concludes by saying, "I cannot help thinking that Tredgold, and others who think with him, have in the first instance been struck with the beauty of Dr. Young's theory, and have made all their experiments more with a view of supporting than of testing it. The experiments made here (in Manchester) were at first made on plain square bars, after which different patterns were tried, and this led to the discovery that Tredgold's section was not the strongest by very much." We give these few particulars, as illustrating points referred to in our former article; we may, however, remark, that our correspondent had no intention of questioning the general accuracy of the experiments made at Manchester, which are justly considered of the utmost value.

TOWER BUILDINGS, OLD CHURCHYARD, LIVERPOOL.

The buildings erected of late years in the town of Liverpool, for commercial purposes, have assumed an architectural character of a description never dreamed of until recently. Suites of merchants' offices and commercial chambers have arisen in many of the principal streets, and some of the bye-ways of the town, combining imposing magnitude of size with considerable architectural pretensions, forming suitable abodes for the commerce of the modern Tyre "whose merchants are princes," and whose traffic extends to the uttermost bounds of the earth. Amongst the most important may be mentioned, the royal Bank buildings in Dale-street, the architect the late Mr. Samuel Rowland; Brunswick buildings, Brunswick-street, by Messrs. A. and G. Williams, a view of which appeared in the *Companion to the Almanac*, a year or two since, and which has been repeated in the *Westminster Review*, just published; and Fenwick chambers, Fenwick-street, by Mr. J. A. Picton. Castle-street, the principal street of the town, is about to be adorned with a new branch Bank of England, from the designs of Mr. Cockerell, and immediately adjoining, by the buildings of the Commercial Bank, by Mr. J. Cunningham.

The buildings named at the head of this article are the most recent of this class, being only now on the point of commencement; but will, when completed, be the most imposing in point of size of any yet erected.

They are intended to comprehend one entire block, or insula, extending from Water-street to the Old Churchyard, about 70 yards from north to south, and from Tower-garden to Stringer's-alley, about 34 yards from east to west. One-half of this design is now being carried up, the remainder being left to a subsequent period. The general arrangement is,

with some modifications, the one usually adopted in buildings of this class in the town of Liverpool, and which is found in practice to be the most commodious and profitable.

Under the entire surface there are constructed two heights of vaults for wines, spirits, oils, and other merchandize of like character. Over these there is a basement story partly sunk below the level of the ground, occupied as counting-houses. This is surmounted by four more stories, all occupied as offices and commercial chambers. The buildings surround an inner court or quadrangle, which is entered by large *porte-cochères* and corridors from each of the sides.

The architecture of the exterior is in the Italian palazzo style, necessarily astylar, trusting for its effect to the door and window dressings, cornice, &c., in the absence of any bold projections. The façade fronting the old churchyard, with its returns in the two flanks, will be executed in white stone. The buildings behind, which, owing to the declivity of the ground, are of necessity separate elevations, will be fronted with red stock bricks, with white stone dressings. The principal feature in the design is an Italian tower at the north-west corner, carried up 120 feet above the surface. From the position which the buildings occupy, being an elevated site open to the river Mersey, this will form a conspicuous object in the view of the town from the river, and will command an extensive prospect of the port and shipping. Most probably it will be used as a telegraph station.

The buildings will be constructed fire-proof throughout. The floors are all vaulted with flat brick arches, springing from iron girders, over which are placed floors of wood, resting on the upper edges of the girders. The roof is of wrought iron. The windows are iron; the architraves, skirtings, and mouldings, are run in Roman cement. The internal doors alone are wood, it being found impracticable to use any other material with advantage. The external doors and frames are iron. The staircases are stone, circular in plan, and covered on the top by conical domes thirteen feet in diameter, the ribs iron, glazed with large sheets of plate glass. The windows in the principal fronts are glazed with plate glass. The arrangements for the water-closets, the supply of water and coals, and other conveniences, cannot be explained without plans, but no expense appears to have been spared to render every department perfect and complete.

The denomination of "Tower Buildings" is not derived, as might be supposed, from the tower which forms part of the present design, but from an ancient fortified building which formerly stood on part of the site, called the Tower of Liverpool. This was anciently the property of the Earls of Derby, and was taken down about twenty-three years since.

The buildings are the property of Jos. Bailey, Esq., of Glanusk-park, Breconshire, M.P. for Worcester. The architect is Mr. J. A. Picton, to whom Liverpool is already much indebted. The cost, exclusive of the site, will be about 22,000*l.*

OF WHAT TO DO WITH THE DUKE.

PEDESTALS.

SIR,—*Vulgar hypercriticism* is a very bitter wind that every artist has to bear. And the greater the man the more bitterly blows the blast about him,—he all the while the more sensitive. Until he wraps himself (if he can) in the good vesture of a high firm confidence, —the "first be sure you're right, then go straight ahead" principle,—the good self-conceit that keeps a real man strong; and then the rude blustering breath breathes harmlessly by.

The Poet seeks down into the depths of the Beautiful; and rare gems from a brighter world beget strange laughter in a butcher's 'prentice! The Painter, Sculptor, Architect, casts a lifetime of rich thinking into his work; and little Missy Bull "can't a-bear that picture!"—or perambulating sweeps will pause before the statue and intermit their yelling to cut quaint jokes!—or three tailors on a Monday will stop to gaze upon the building, and conjure up wonderful allusions from their fractional fancies! Art casts her pearls before swine; they turn again and rend her. She lovingly sets up her monuments to grace the heart of man; and there is not a twopenny-halfpenny fellow can pass by but he must be clever and fling his gibe. And she wonders often how it is so; and grieves sometimes, and gets discouraged.

There is a reason for every thing; there is a reason for this. This joke-mockery (as we may call it) is argument densely condensed—a page of logic thrown into a word of satire. But with the greater condensation, of course, there is the greater room for falling. A work of Art is, in another mode, argument densely condensed: and with the greater condensation, of course, there is the greater openness to misconstruction: and between this greater openness to misconstruction and that greater laxity from law, poor Art comes often badly off;—herself so easily assailed, and her assailant so ruthlessly advantaged, no wonder that she gets many a hard knock and very undeservedly, —sinks, frequently, ashamed beneath fallacy, when truth would be proud to give her honour.

Therefore, now that we have got him down (in our last), we must look at him with full scorn of *Vulgar Hypercriticism*.

There is the Doctor's man, for instance, "Master Hugh," with a long cock-and-bull story about a bullock. It is this very sin. And, by the bye, it were well if every one could be as easily persuaded of it as worthy Hugh. I accused him of it broadly the other day, and declared it was a shame. Hugh would fain have disproved me (and he is a tough logician, too, in his own way), but he gave in at last, like a man (being a good-hearted fellow,—all Scotchmen are so), and owned that it just happened to be joke *versus* generosity within him, and joke happened to win it, that was all. Still maintaining the root of the matter, however, that the sculpture might have shown more *life* and *beauty*.

The sculpture is as it is,—it cannot change at bidding now. And as it is, it is a very valuable work. If we were to set down as valueless every thing that people choose to blame, what would be left us? Not even the "Discourses" themselves. Better to set about advantaging the statue than to keep snarling at it for ever. It is not absolutely celestial; but it needs only good management, proper advantaging, to be made a very glorious monument! Therefore—

Of what to do with him. And this is the easiest thing in the world. We happen, in the first place, to have no precedent for setting a horse on a column; so that this our first and favourite mode of honouring an exalted man by exalting his effigy must be abandoned,—unless we are prepared to dismount the Duke and *seat* him on the abacus with his feet dangling over the front, which I don't think well of at all. So Mrs. PRECEDENT turns over the next leaf, and there, sure enough, under the head *Of how to deale with a horse ande a manne*, we have it exactly.

> We hie him away to—no matter where,
> And build up a precedent pedestal there,
> With its Base, and its Dado, and Cornice so fair,
> And its panels of sculpture so rich and rare,
> All for to hold "th'old Duke" and "th'old mare;"

And that's what we must do with him. But the gentlewoman has been unfortunate lately; her boys are growing too big for her, and threaten turbulence and actual rebellion; (whereat she is, of course, a very angry woman;) and so we don't at all hesitate in this case to question the maternal wisdom, and *think* at any rate for ourselves.

I. The primary simple idea in the placing of a statue is, of course, to place it on the ground like that which it represents.

II. We improve upon the simple idea by giving the statue a *basis*, that is, a ground for itself; whereby it assumes a more formal monumental character, and obtains also in connection with such character, increased importance and state. This is, so far, the rationale of the Pedestal.

III. (The statue being, of course, no matter of the architect's province, but merely a *fact* with which he has to deal.) We proportion the pedestal to the statue; 1st, with reference to graceful general form; 2ndly, with reference to relative importance, by dimension, by display, and by spirit (so that the sculpture may not be overpowered by the size or richness, or other importance of the pedestal, and, at the same time, that the pedestal may be equal to its office—not too mean, or too small, or otherwise deficient,—and, lastly, that the pedesta may not be incongruous in spirit—inconsistent in genius with the sculpture); and, 3rdly, with reference to the restrictions under which the design of the pedestal is laid by the requisites of sculptural effect (so that the sculpture may not be placed too high, or too low, or otherwise at variance with its right effect). The proportion and design of the pedestal, 4thly, as regards itself specially, is understood; as it never loses its independence as a complete design in itself, all the while that it is merely an accessary of the statue, and merely a part of the whole structure.

IV. Then we improve upon the pedestal thus, (and now we are getting beyond the usual depth of architectural design); we throw over it the refinement of graceful artistic conjunction with 1st, the ground, 2ndly, the sculpture. The pedestal itself is essentially vertical in character, and we conjoin it with the essentially horizontal of the ground. We spread the base: the contour becomes a curve, terminating at one extremity in vertical tendency, and at the other in horizontal.

Memoranda. The Greek stylobate will at once occur to the mind. Observe also the vast inferiority of the York Column to the Nelson Column in this respect.—Fox's statue in Bloomsbury-square, and others, display similar advantage over the common idea.—The slightest hand-sketch will enable the reader to observe the difference between the base dado and cornice of common orthodoxy, and the same with a bold wide-spreading graduated stylobate.—It was Sir Joshua Reynolds' praise to Vanbrugh that his compositions were so artistic in this idea.—The capital of a column, also, is an exemplification of our present subject, being a junction of the vertical of the column with the horizontal of the entablature, —the Ionic capital of the Greeks being in this respect an extremely bad design. The rationale of a capital and that of a base are so far similar, that that which serves for the one will be not altogether incongruous for the other. The Doric or Corinthian capital, if used for a base, would manifest no essential inconsistency, although not exactly appropriate; but try the Ionic capital for a base!—the Greek Ionic at least; the four-horned Roman is much better, although still very objectionable.

Thus we have connected the pedestal with the ground. We have now to connect it with the sculpture. Suppose we give the pedestal a cornice,—the reason of it is this. The contour rising from the ground tends to fall short of absolute verticality and turns *inwards;* and we turn it outwards again by the projection of a cornice,—thus rectifying the line by making it a *scotia*.

The Greeks, Egyptians, &c., used the excellent principle of inclination in the vertical face, which gave the greater reason to the cornice; although, even with our usual perfectly perpendicular wall, the inward tendency of the contour is still produced by the horizontal ground and the vertical edifice forming in the eye, independently of any artistic stylobate, the curved contour of connection. The vertical contour is led off beneath by the ground, and this is *balanced* by leading it off above by a cornice; the *finish* which a cornice produces, is the formation of a *scotia* contour —a graceful balance in the perpendicular outline.

The cornice does not at all interfere with the junction of the pedestal with the statue. It merely adds a refinement—an elegant finish to the contour, by keeping separate the pedestal and statue as two objects, when without a cornice (especially with certain kinds of statue) the two might run too much into one, more confused than conjoined. There are certain cases, however, where the character of the monument would suffer in *majesty* by the *elegancy* of a cornice; and we preserve a plain simple dignity by the upper portion of the pedestal being a mere block. (If my memory serve me well, Fox's statue already referred to, is thus advantaged very manifestly). The connection of the pedestal with the statue is effected by the weathering of the cornice, the superimposed plinth or base, and so on; or when there is no cornice, by similar management of the general outline formed by the statue and pedestal; the contour in the one case being divided by the cornice, spreading outwards to the cornice from the statue above,

these interesting remains as they deserve. I have, however, dispatched the following specimens on their way to England:—eight small bas-reliefs of battles, lion hunts, &c. (very beautiful); two large winged Divinities (one with an eagle's head), the head of one of the great bulls, and a portion of a slab, with the head of a king, and his attendant eunuch. They are all fine specimens.

I have been about twenty days occupied in packing and forwarding these antiquities, and have had to move immense blocks—some nearly nine feet square and one foot thick—of the most fragile material, and covered with delicate sculpture, without even a *rope* capable of sustaining an ordinary weight, and without any machinery. Many of the blocks have been sawn in various directions, to reduce them to a transportable size, and have been removed to the river in carts which in England would scarcely be used for carrying a load of hay. I have luckily succeeded in sending them all without accident. I trust you will one day see them in the British Museum. The finer sculptures—the great lions and fine bas-reliefs—remain in *statu quo*; I had no means of removing them. As I advance further into the mound, the sculptures become more perfect in preservation, and superior in execution. The discoveries are creating great interest; and every post brings me letters from parties wanting information, and offering (scientific) assistance.

Major Rawlinson, the British resident at Baghdad, in a letter to Mr. Layard, says:—"I look upon the *Nimroud* marbles as invaluable. They unfold to us the history, theology, language, arts, manners, military skill, political relations, &c., of one of the most illustrious nations of antiquity, and thus fill up an enormous blank in our knowledge of the early history of the world. I consider the discovery of these sculptures as more valuable than even Pompeii or Herculaneum, and view every new inscription as equal to gaining one of the lost decades of Livy." "I hope," says Mr. Layard, "the people at home will take the same view of the subject."

At the conclusion of Mr. Layard's paper, Mr. Tite said he was most anxious to direct the attention of the Government to the discoveries made by Mr. Layard, and to obtain for him that aid which he deserved. We owed much in England to individual enterprize, and that, too, on the part of non-professional men: he would instance Belzoni and Fellows, who had done so much. Mr. Layard was of the same class; he was a solicitor, travelling for his health; but by his enterprise and good judgment he had succeeded in making what must be considered some great discoveries. The remains which had been described referred to two different periods. As to those from Nimroud, it did not seem quite clear from what part they came; all the buildings there, however, were ascribed to Nimrod. The history of that period was well and briefly narrated by Gibbon, from whom he (Mr. Tite) then read some passages, to shew the degree of civilization early attained by the inhabitants of Asia.

The speaker continued: he did not consider these remains so ancient as Mr. Layard, but attributed them to the period of Cyrus and Darius. The French had been intent on the elucidation of this same period of history, and were exploring neighbouring ground, but had not been so successful as Mr. Layard.

As to Al Hather, it was one of those extraordinary cities, of which the rise, progress, and destruction, were alike mysterious. It was well known, but had not been investigated, the difficulties of access being great. Dr. Ross, in the ninth volume of the Transactions of the Geographical Society, gave a plan of the city.

From this plan, it was seen that the walls surrounding the city formed a circle, this was divided into two by a wall across the diameter; one-half was appropriated to the living, the other half to the dead, being the necropolis. The description given by Buckingham of another extraordinary city, Ctesiphon—probably agreed with Al Hather; and the account given by Gibbon of the sack of this city by Omar, might probably serve for an account of the destruction of Al Hather. He was most anxious that the exertions of Mr. Layard should be recognised by the Government, and that we should see the results of his labours in the British Museum.

The honorary secretary said, that he had learnt two days before, that the Government had already made an arrangement to reimburse Mr. Layard, that some of the marbles were on their way to this country, and that means had been provided for further investigation. We shall be truly glad to find it so, but at present are disposed to regard it as somewhat doubtful.

APPENDIX TO "ANNOTATIONS ON IRON."

Allusion having been made to the experiments of Messrs. Fairbairn and Hodgkinson on the strength of iron and the best form of girders (see p. 459), we think some additional particulars may be interesting. We also append extracts from answers to certain inquiries, made about the time the results of these experiments were published, from an individual who was well acquainted with their nature, and who had opportunities of witnessing their progress. The particulars of these experiments are to be found in the transactions of the British Association for the Advancement of Science, and in those of the Literary and Philosophical Society of Manchester, vol. v. Mr. Fairbairn's researches were, we believe, directed mainly to the comparative strength of different descriptions of iron, and to the effects of the hot and cold blasts. Mr. Hodgkinson directed his attention rather to the capabilities of the material to resist the different forces of tension, cross strain, and compression, and to ascertaining the form and proportion, which should be given to the material under particular circumstances. Our correspondent wrote:—"All I think it necessary to say with reference to these experiments is, that you must avoid making any reference to particular makes of iron, for it unfortunately happens that the results here shewn are not borne out in general practice. The fact was, that the use to which these samples were intended to be applied became so well known, that many parties, making very inferior iron generally, sent us samples of very first-rate strength and toughness." And in reference to the hot and cold blast iron, which are compared in our former article with decided disadvantage to the former, we find that we were advised as follows:—"Experience proves, as a *general* rule, that cold blast iron is stronger than hot; but this arises from the fact that the hot blast enables the maker to use an inferior material, which was formerly left on the bank, and was a dead loss; and very few are honest enough, or have sufficient resolution, to withstand the temptation. If the same materials be worked, the hot-air iron has a trifle the preference. The *prejudice* against the hot air is perfectly ridiculous, if the maker will but put proper materials into the furnace. Some stones and coal, however, will not bear the hot blast. Yorkshire iron, for instance, is greatly injured by it." On the form of section, and the effect of time in producing deflection of iron beams, the points which Mr. Hodgkinson investigated, he said:—"Time produces so little deflection in iron, provided it be only fairly weighted, as not to be at all worth notice."—"Dr. Young started a theory, upon which Tredgold, Bramah, and several foreign engineers made some very interesting experiments. They were very satisfactory as far as they went, but they ought to have tried greater weights, and then their whole theory would have proved itself futile. The beam, which Tredgold called the best, in his experiments, would have broken with a very trifling addition of weight; but he did not know that, because he did not try it. The resul from Tredgold's reasoning is, that the *elasticity* of cast-iron *remains perfect*, when a bar is not loaded with more than about 15,000 pounds per square inch, and this he calculates to be about one-third of the breaking weight; but in the late experiments at Mr. Fairbairn's, many bars of cast-iron were broken with a weight actually less than what Tredgold called his strongest point. In Mr. Hodgkinson's report to the British Association, I think it is shewn clearly that there is no 'elastic point' in iron."—Tredgold, Dulau, and others make it out, that a beam of any form will bear the same weight, which ever way it is turned upwards; the absurdity of which will be shewn by a simple example. A bar of cast-iron of the I section will carry three or four times as much weight, set in that manner, as it will when set thus I. All Tredgold's reasoning goes on the supposition, that the tensile and compressive strengths of iron are the same, which is, in fact, begging the whole question. Unless we have been most strangely and unaccountably deceived, in every one of our experiments, as to the breaking point, we have *invariably* found, that it takes six times as much pressure to crush cast-iron as to tear it asunder, and I therefore prefer that form of beam which has the lower edge the strongest, where the greatest pressure will always take place." Notwithstanding the result of the experiments abovementioned, we know that the I form of section is still persevered in by many; and it is much to be regretted that complete unanimity should not prevail in this very important matter. It is desirable that attention should still be directed to the subject, until it is completely set at rest by indisputable experiment. In many great works, iron is the most important material of any employed; and our pages have heretofore recorded instances of most disastrous failures. The writer above-quoted from, after saying that he has paid much attention to the question, concludes by saying, "I cannot help thinking that Tredgold, and others who think with him, have in the first instance been struck with the beauty of Dr. Young's theory, and have made all their experiments more with a view of supporting than of testing it. The experiments made here (in Manchester) were at first made on plain square bars, after which different patterns were tried, and this led to the discovery that Tredgold's section was not the strongest by very much." We give these few particulars, as illustrating points referred to in our former article; we may, however, remark, that our correspondent had no intention of questioning the general accuracy of the experiments made at Manchester, which are justly considered of the utmost value.

TOWER BUILDINGS, OLD CHURCHYARD, LIVERPOOL.

The buildings erected of late years in the town of Liverpool, for commercial purposes, have assumed an architectural character of a description never dreamed of until recently. Suites of merchants' offices and commercial chambers have arisen in many of the principal streets, and some of the bye-ways of the town, combining imposing magnitude of size with considerable architectural pretensions, forming suitable abodes for the commerce of the modern Tyre "whose merchants are princes," and whose traffic extends to the uttermost bounds of the earth. Amongst the most important may be mentioned, the royal Bank buildings in Dale-street, the architect the late Mr. Samuel Rowland; Brunswick buildings, Brunswick-street, by Messrs. A. and G. Williams, a view of which appeared in the *Companion to the Almanac*, a year or two since, and which has been repeated in the *Westminster Review*, just published; and Fenwick chambers, Fenwick-street, by Mr. J. A. Picton. Castle-street, the principal street of the town, is about to be adorned with a new branch Bank of England, from the designs of Mr. Cockerell, and immediately adjoining, by the buildings of the Commercial Bank, by Mr. J. Cunningham.

The buildings named at the head of this article are the most recent of this class, being only now on the point of commencement; but will, when completed, be the most imposing in point of size of any yet erected.

They are intended to comprehend one entire block, or insula, extending from Water-street to the Old Churchyard, about 70 yards from north to south, and from Tower-garden to Stringer's-alley, about 34 yards from east to west. One-half of this design is now being carried up, the remainder being left to a subsequent period. The general arrangement is,

with some modifications, the one usually adopted in buildings of this class in the town of Liverpool, and which is found in practice to be the most commodious and profitable.

Under the entire surface there are constructed two heights of vaults for wines, spirits, oils, and other merchandize of like character. Over these there is a basement story partly sunk below the level of the ground, occupied as counting-houses. This is surmounted by four more stories, all occupied as offices and commercial chambers. The buildings surround an inner court or quadrangle, which is entered by large *porte-cochères* and corridors from each of the sides.

The architecture of the exterior is in the Italian palazzo style, necessarily astylar, trusting for its effect to the door and window dressings, cornice, &c., in the absence of any bold projections. The façade fronting the old churchyard, with its returns in the two flanks, will be executed in white stone. The buildings behind, which, owing to the declivity of the ground, are of necessity separate elevations, will be fronted with red stock bricks, with white stone dressings. The principal feature in the design is an Italian tower at the north-west corner, carried up 120 feet above the surface. From the position which the buildings occupy, being an elevated site open to the river Mersey, this will form a conspicuous object in the view of the town from the river, and will command an extensive prospect of the port and shipping. Most probably it will be used as a telegraph station.

The buildings will be constructed fire-proof throughout. The floors are all vaulted with flat brick arches, springing from iron girders, over which are placed floors of wood, resting on the upper edges of the girders. The roof is of wrought iron. The windows are iron; the architraves, skirtings, and mouldings, are run in Roman cement. The internal doors alone are wood, it being found impracticable to use any other material with advantage. The external doors and frames are iron. The staircases are stone, circular in plan, and covered on the top by conical domes thirteen feet in diameter, the ribs iron, glazed with large sheets of plate glass. The windows in the principal fronts are glazed with plate glass. The arrangements for the water-closets, the supply of water and coals, and other conveniences, cannot be explained without plans, but no expense appears to have been spared to render every department perfect and complete.

The denomination of "Tower Buildings" is not derived, as might be supposed, from the tower which forms part of the present design, but from an ancient fortified building which formerly stood on part of the site, called the Tower of Liverpool. This was anciently the property of the Earls of Derby, and was taken down about twenty-three years since.

The buildings are the property of Jos. Bailey, Esq., of Glanusk-park, Breconshire, M.P. for Worcester. The architect is Mr. J. A. Picton, to whom Liverpool is already much indebted. The cost, exclusive of the site, will be about 22,000*l*.

OF WHAT TO DO WITH THE DUKE.

PEDESTALS.

Sir,—*Vulgar hypercriticism* is a very bitter wind that every artist has to bear. And the greater the man the more bitterly blows the blast about him,—he all the while the more sensitive. Until he wraps himself (if he can) in the good vesture of a high firm confidence, —the "first be sure you're right, then go straight ahead" principle,—the good self-conceit that keeps a real man strong; and then the rude blustering breath breathes harmlessly by.

The Poet seeks down into the depths of the Beautiful; and rare gems from a brighter world beget strange laughter in a butcher's 'prentice! The Painter, Sculptor, Architect, casts a lifetime of rich thinking into his work; and little Missy Bull "can't a-bear that picture!"—or perambulating sweeps will pause before the statue and intermit their yelling to cut quaint jokes!—or three tailors on a Monday will stop to gaze upon the building, and conjure up wonderful allusions from their fractional fancies! Art casts her pearls before swine; they turn again and rend her. She lovingly sets up her monuments to grace the heart of man; and there is not a twopenny-halfpenny fellow can pass by but he must be clever and fling his gibe. And she wonders often how it is so; and grieves sometimes, and gets discouraged.

There is a reason for every thing; there is a reason for this. This joke-mockery (as we may call it) is argument densely condensed—a page of logic thrown into a word of satire. But with the greater condensation, of course, there is the greater room for falling. A work of Art is, in another mode, argument densely condensed: and with the greater condensation, of course, there is the greater openness to misconstruction: and between this greater openness to misconstruction and that greater laxity from law, poor Art comes often badly off;—herself so easily assailed, and her assailant so ruthlessly advantaged, no wonder that she gets many a hard knock and very undeservedly, —sinks, frequently, ashamed beneath fallacy, when truth would be proud to give her honour.

Therefore, now that we have got him down (in our last), we must look at him with full scorn of *Vulgar Hypercriticism*.

There is the Doctor's man, for instance, "Master Hugh," with a long cock-and-bull story about a bullock. It is this very sin. And, by the bye, it were well if every one could be as easily persuaded of it as worthy Hugh. I accused him of it broadly the other day, and declared it was a shame. Hugh would fain have disproved me (and he is a tough logician, too, in his own way), but he gave in at last, like a man (being a good-hearted fellow,—all Scotchmen are so), and owned that it just happened to be joke *versus* generosity within him, and joke happened to win it, that was all. Still maintaining the root of the matter, however, that the sculpture might have shown more *life* and *beauty*.

The sculpture is as it is,—it cannot change at bidding now. And as it is, it is a very valuable work. If we were to set down as valueless every thing that people choose to blame, what would be left us? Not even the "Discourses" themselves. Better to set about advantaging the statue than to keep snarling at it for ever. It is not absolutely celestial; but it needs only good management, proper advantaging, to be made a very glorious monument! Therefore—

Of what to do with him. And this is the easiest thing in the world. We happen, in the first place, to have no precedent for setting a horse on a column; so that this our first and favourite mode of honouring an exalted man by exalting his effigy must be abandoned,—unless we are prepared to dismount the Duke and *seat* him on the abacus with his feet dangling over the front, which I don't think well of at all. So Mrs. Precedent turns over the next leaf, and there, sure enough, under the head *Of how to deale with a horse ande a manne*, we have it exactly.

> We hie him away to—no matter where,
> And build up a precedent pedestal there,
> With its Base, and its Dado, and Cornice so fair,
> And its panels of sculpture so rich and rare,
> All for to hold "th'old Duke" and "th'old mare;"

And that's what we must do with him. But the gentlewoman has been unfortunate lately; her boys are growing too big for her, and threaten turbulence and actual rebellion; (whereat she is, of course, a very angry woman;) and so we don't at all hesitate in this case to question the maternal wisdom, and *think* at any rate for ourselves.

I. The primary simple idea in the placing of a statue is, of course, to place it on the ground like that which it represents.

II. We improve upon the simple idea by giving the statue a *basis*, that is, a ground for itself; whereby it assumes a more formal monumental character, and obtains also in connection with such character, increased importance and state. This is, so far, the rationale of the Pedestal.

III. (The statue being, of course, no matter of the architect's province, but merely a *fact* with which he has to deal.) We proportion the pedestal to the statue; 1st, with reference to graceful general form; 2ndly, with reference to relative importance, by dimension, by display, and by spirit (so that the sculpture may not be overpowered by the size or richness, or other importance of the pedestal, and, at the same time, that the pedestal may be equal to its office—not too mean, or too small, or otherwise deficient,—and, lastly, that the pedesta may not be incongruous in spirit—inconsistent in genius with the sculpture); and, 3rdly, with reference to the restrictions under which the design of the pedestal is laid by the requisites of sculptural effect (so that the sculpture may not be placed too high, or too low, or otherwise at variance with its right effect). The proportion and design of the pedestal, 4thly, as regards itself specially, is understood; as it never loses its independence as a complete design in itself, all the while that it is merely an accessary of the statue, and merely a part of the whole structure.

IV. Then we improve upon the pedestal thus, (and now we are getting beyond the usual depth of architectural design); we throw over it the refinement of graceful artistic conjunction with 1st, the ground, 2ndly. the sculpture. The pedestal itself is essentially vertical in character, and we conjoin it with the essentially horizontal of the ground. We spread the base: the contour becomes a curve, terminating at one extremity in vertical tendency, and at the other in horizontal.

Memoranda. The Greek stylobate will at once occur to the mind. Observe also the vast inferiority of the York Column to the Nelson Column in this respect.—Fox's statue in Bloomsbury-square, and others, display similar advantage over the common idea.—The slightest hand-sketch will enable the reader to observe the difference between the base dado and cornice of common orthodoxy, and the same with a bold wide-spreading graduated stylobate.—It was Sir Joshua Reynolds' praise to Vanbrugh that his compositions were so artistic in this idea.—The capital of a column, also, is an exemplification of our present subject, being a junction of the vertical of the column with the horizontal of the entablature, —the Ionic capital of the Greeks being in this respect an extremely bad design. The rationale of a capital and that of a base are so far similar, that that which serves for the one will be not altogether incongruous for the other. The Doric or Corinthian capital, if used for a base, would manifest no essential inconsistency, although not exactly appropriate; but try the Ionic capital for a base!—the Greek Ionic at least; the four-horned Roman is much better, although still very objectionable.

Thus we have connected the pedestal with the ground. We have now to connect it with the sculpture. Suppose we give the pedestal a cornice,—the reason of it is this. The contour rising from the ground tends to fall short of absolute verticality and turns *inwards*; and we turn it outwards again by the projection of a cornice,—thus rectifying the line by making it a *scotia*.

The Greeks, Egyptians, &c., used the excellent principle of inclination in the vertical face, which gave the greater reason to the cornice; although, even with our usual perfectly perpendicular wall, the inward tendency of the contour is still produced by the horizontal ground and the vertical edifice forming in the eye, independently of any artistic stylobate, the curved contour of connection. The vertical contour is led off beneath by the ground, and this is *balanced* by leading it off above by a cornice; the *finish* which a cornice produces, is the formation of a *scotia* contour —a graceful balance in the perpendicular outline.

The cornice does not at all interfere with the junction of the pedestal with the statue. It merely adds a refinement—an elegant finish to the contour, by keeping separate the pedestal and statue as two objects, when without a cornice (especially with certain kinds of statue) the two might run too much into one, more confused than conjoined. There are certain cases, however, where the character of the monument would suffer in *majesty* by the *elegancy* of a cornice; and we preserve a plain simple dignity by the upper portion of the pedestal being a mere block. (If my memory serve me well, Fox's statue already referred to, is thus advantaged very manifestly). The connection of the pedestal with the statue is effected by the weathering of the cornice, the superimposed plinth or base, and so on; or when there is no cornice, by similar management of the general outline formed by the statue and pedestal; the contour in the one case being divided by the cornice, spreading outwards to the cornice from the statue above,

and outwards to the cornice from the pedestal beneath,—and the contour in the other case being undisturbed, statue and pedestal in one mass.

V. We improve still further, and lastly, by another refinement. The statue is connected with the pedestal, and the pedestal is connected with the ground; but it does not follow that the statue is connected with the ground. The stylobate is good connection between pedestal and ground; we now make the pedestal good connection between statue and ground. The statue has been harmonized with the pedestal, and the pedestal with the ground and in itself; we must now have the statue, pedestal, and ground, harmonized all together—unity in the whole effected. The conjunction of the pedestal with the ground, therefore, is now improved upon in the conjunction of the whole with the ground, so that the contour of the whole mass shall be one harmonious line, and the monument as a whole completely proportioned.

Of course the addition of one grace is supposed not to be made to destroy any previous other. And thus we have the monument perfected. And its criticism consists in the examination of its compliance with the various principles detailed.

The design of the sub-committee outrages III. 1, 2, and 3, IV. 2, and V.,—that is, by-the-bye, every applicable principle in the series. The Arch, as at present the pedestal of that statue, is repugnant to graceful general form; to relative importance, in all the three respects of dimension, display, and spirit; to sculptural effect; to graceful connection of pedestal and statue; and to harmonious unity of form in the whole mass. Whatever the Arch in itself may be, and whatever may be the grandeur of the idea of placing the statue on that proud seat, *the Arch is not a good pedestal for that statue,—it spoils the effect which the statue might produce.*

I pass over allusion to any alterations on the sculpture which Mr. Wyatt may have to effect in order to suit it to the proper site, or rather in removing the character which may have been put upon it to suit it to the present site. Perhaps there is sharpness and boldness which must be modified; although, after all, considering the gigantic size of the sculpture, and the fact that its light-and-shade will soon be that of a perfectly *black* object, too much sharpness or boldness is scarcely to be feared.

I presume that it will be admitted that the character to be carried out in this subject is *grandeur*, and that the grandeur must be the grandeur of *magnitude;* that the effect of the statue must chiefly consist in the development of its own mighty mass.

It is very difficult to express briefly in words, any principles of guidance in such a matter of design as the present. It just amounts to little more than saying that the pedestal must not be too high, nor too low—too large, nor too small,—too elaborate, nor too simple,—and so on. Although, in this case, with regard to one important point, it may be laid down very decidedly that the base of the sculpture should not be placed so far above the eye, as ordinary precedent ideas of proportion may probably advise. The exact elevation may be determined by the rule, that the spectator at the proper distance for properly observing the minutiæ of the sculpture, shall have the figure at the proper angle of vision for its right effect as a whole,—that at a distance of perhaps from 50 to 100 feet in this instance the sculpture shall appear, not as a man on horseback viewed from beneath, but as usually seen in nature, with the least possible elevation consistent with a duly grand monumental character. The desired grandeur in the pedestal, with the requisite lowness of mass, may be given by the greater extension of the curve of connection with the ground: and by dispensing with cornice (as may be very well done in the effect desired) this extension may be had still more increased.

Don't put *railings* round it. Foreigners think Mr. Bull must be a roaring lion going about seeking what he may destroy, so carefully do we *keep him off* always. And even, say they, even if boys *will* knock off corners, better far to have a little mutilation (if it should come to that—which is not altogether likely) than to mar that very important part of the work, the ground line, so completely and so hopelessly for ever.

Regarding the site, we are in rather unfortunate circumstances. To *make* a site is, (with us,) I fear, out of the question: we don't do such things. The parade at the Horse Guards?—A very *shabby* site, truly. Waterloo-place?—Large enough *perhaps;* but not exactly suited otherwise. Still we may get a site. If I were a king, said the little rustic, as the story goes, I would have milk porridge and milk with it. If I had my way I would cut down certain trees in a certain Square, and form a really proper site for the grand Wellington. A broad grand pavement within the carriage-way,—(a terrace? accessaries?) the mighty monument in the grand centre! But whether such an atrocious offence to utilitarianism could possibly be accomplished, I cannot tell.

I have found it not an easy thing to get him down and to do well with him even on paper; and your readers must allow for imperfections,—or come spiritedly forward and supply them. Not an easy thing on paper: still less, perhaps, is it an easy thing in fact. No one can but feel a sincere desire that so grand a monument of Art, and the memorial of a man in whom we justly take so great a pride, should be so administered as to be worthy of Art, worthy of Wellington, worthy of England. It is not so administered now. A most noble monument—a most glorious offering to the great man's fame! Pity that we should mar it when we might enhance it! The statue is a fact weakened or strengthened by another fact the site: the Sculptor a fact weakened or strengthened by another fact the Architect. How much of the deed depends on how it is done! How much of the glory consists in how it is given! How much of the value of this statue lies out of itself! As it is, how lessened—weakened! As it ought to be, how augmented—strengthened! Then let the Power come forward, with a hearty Will, and show an English manliness to take him down, an English openhandedness to do well with him!

Robert Kerr.

MARGATE, AND THE OLD CHURCH.

The same hasty flight that enabled us to speak, last week, of the new college at Canterbury, took us into Margate for a few hours. The aspect of the town was cheerless,—

> "Its lights were dead,
> Its guests were fled,"

and we had the "White Hart," — waiter, chamber-maid, and boots inclusive, all to ourselves. When our business was over, though it was growing dark, we looked into the old church, and were glad to find that something had been done towards restoring it to a fitting condition. The body of the church is Norman, it consists of three nearly equal lateral divisions, and is very long and very low.

The west gallery is removed, a new porch formed there, and a new west window of perpendicular character constructed. A plain waggon-headed ceiling is formed, to be panelled when funds are forthcoming. The Norman columns dividing the nave and aisles are restored, as is also the very nice perpendicular font, adorned with the arms of England and of the Cinque ports. There is also a new east window and a new altar piece of oak; the latter chiefly owing to the archbishop, who himself gave 50*l.* to get rid of the Corinthian excrescences formerly there. The sedilia and piscina are plain. Mr. W. Caveler was the architect, and the money spent is about 800*l.* The new pewing is much too high, but the architect is probably blameless. Outside, nothing has been done; the tower is an amusing specimen of churchwardens' Gothic of thirty or forty years ago.

The branch railway to Margate is to be opened forthwith, and those who have endured the four hours and a half journey, to which the directors of the South Eastern now subject land travellers to Ramsgate, (melancholy reminiscence!) will be glad of even the little saving of time this branch will effect. Some of the bridges, by the way, near Margate, seemed to us little calculated for great traffic. Our trust must be in Pasley; therefore, O most excellent general, open wide your eyes.

Surveyorship, St. Thomas's Hospital.—The election will take place on the 11th. Testimonials are to be sent in on the 9th.

IMPROVEMENTS (?) IN SCARBOROUGH.

Mr. Editor,—Observing in your paper of the 19th ult. a wish to know something more about the railway station, and I presume also the general improvements of Scarborough, I beg to send you the following particulars:—

If it be true that Scarborough is the "Queen of English watering-places," it must be understood to derive its celebrity from its scenery and picturesque beauties, and not from its architecture, for there are not above half a dozen buildings that are worth the name.

In point of situation, Scarborough is second to none; it stands unrivalled both for its land and sea views; but it is not too much to say, that its architectural beauties are in an inverse ratio to its natural advantages, which is a fault and a blemish much to be deplored; for we shall see in the course of this article how its advantages have been thrown away, and its architectural character neglected.

I will instance Bath, as a place where the localities have been moulded into architectural magnificence by an educated man, and the result is nothing but pleasure and satisfaction, both to the eye and to the mind; but Scarborough—or rather "new Scarborough," with far greater natural advantages, and fresh from the hand of the builder, creates nothing but disgust. Had Woods planned at Scarborough instead of Bath, he would have made it one of the finest towns in England, for there was every facility for doing so a few years ago.

The south cliff, or as it is commonly called "New Scarborough," is separated from Scarborough by a ravine running from the Hull road down to the sands; it is connected, however, by a cast-iron bridge of four spans, called the Cliff bridge, which was built originally for the Spa Saloon only, but now serves also for the south cliff inhabitants.

The top of the cliff (the tide when up washing its base, which is protected by a sea-wall) is probably 300 feet from the level of the sea. On this cliff is a zig-zag row of houses, which the local papers call (I forget the precise terms, but amounting to) "splendid palaces," "charming crescents," "delightful villas." To make a simile, to give a better idea of their position, this row of houses has the appearance of a railway train passing from the *down* on to the *up* line, with this addition, each carriage higher than its neighbour; fix the idea, and you have the south cliff esplanade before you.

At the end of this row stands a "villa" of the cockney gothic school, then another row of houses of a little more symmetry than the last, and as a masterpiece for the finish, comes the end of the Prince of Wales's Crescent—a blank wall, with pilasters at the angles, surmounted by a gable full of chimney stacks!—a more stupid perpetration cannot well be conceived.

In returning from this survey let us glance at the Crown Hotel, which is the centre of the esplanade, and on which the architect appears to have "used up" all his architectural knowledge. Here we see something new in the way of design—the Corinthian supported by the stalwart Greek Doric, and even without any intervening entablature: this may be seen in what is termed the "portico," but which is no other than a trumpery display of columns, merely for the sake of display, without any real use, in bad taste and still worse proportion.

If it should be asked who was the architect, I answer, there was none employed. It was conceived by some speculative wise-acre that the "native talent" (concentrated in a speculative builder) was quite equal to the task, and, therefore, "Why employ an architect?"

The result, as in all such cases, may be summed up in two words, "complete failure."

It provokes a smile to see the ridiculous and awkward attempts made at display, by means of pilasters with Corinthian caps (the same moulds having been used by all the plasterers in the place for the last five years); and so infatuated has been the "native talent" in one instance to get pilasters, that it has neglected to bring over the entablature to the same face—the effect of which, at the angle of the building, may be imagined.

There are three radical errors in the laying out of this cliff: the first of which I conceive to be the placing a carriage road between the houses and the view of the sea; second, in building the houses on an inclined plane; and, third, having backyards and excrescences looking out upon a most lovely landscape.

In my opinion (and I think I shall have every man of taste with me) the following considerations ought to have produced a plan worthy of the spot:—first, the view from the houses towards the sea ought to be uninterrupted and pleasant, devoid of the common-places of town life, and as quiet from every day noise as possible: for this reason—the people who reside here come from the inland towns to enjoy country life and the sea air, and, therefore, want change of scene; and how is this to be obtained when every thing goes on around you as in the place you left? This, therefore, leads to the conclusion, that the space between the houses and the edge of the cliff (say about 100 feet) ought to be laid out in ornamental grounds, private to the esplanade, but common to all the houses. 2nd. As it is very painful to see a person with one leg shorter than the other, so it is to see one house jumping above its neighbour; and this leads us to the result of having them on the same level, which might have been done by embanking the lower end and cutting off the top of the hill; then making the space in front of the houses into an agreeable garden of flowers and grass-plots—not trees. The level thus created, the buildings rise as one grand whole, getting over a great difficulty, and vastly improving the general outline. 3rd. Rich as is the view seawards, the landscape at the back of the houses is equally pleasing and agreeable. When the setting sun is just imparting its expiring rays to the vallies, and just on the point of disappearing behind the hills—then, at such a time, who would not forsake the monotonous dashing of the waves for such a view as this? But, I ask, who can enjoy the setting sun according to the present arrangement of the esplanade? If you attempt it, your poetic feelings will receive a shock by the backyards and privy-doors staring you in the face, and maybe (owing to the defective drainage even in this new part) your olfactories be assailed by the most horrid of smells. This front might have been made delightful by having the kitchen offices under a terrace, on to which French casements might have led from the drawing-rooms, thus commanding extensive and delightful views. The entrance door would have been in this front, coming up a few steps from the road, all of which might have been arranged by an architect of taste with perfect ease.

So much for general arrangements: in my next I will give you a descriptive account of some of the better buildings. J. L. C.

FOREIGN INTELLIGENCE.

The Art-Union of Prague, Austria.—The interest which the *public* take in such establishments, increases even in these hitherto reputed half-civilized countries. At the last exhibition, the number of visitors increased to 16,480, and twenty shareholders bought forty pictures for the sum of 10,434 florins (1,000*l.*). The Union purchased forty-six pictures for 8,353 florins. The number of shareholders increases not only in Prague and Bohemia, but also in Silesia and Galicia, where hitherto no such association existed. In the year 1845 the number of members was 2,473, who possessed 3,149 shares—this year the proportion has increased to 2,966 members and 3,622 shares. The Prague Union has also put aside a separate fund for executing public monuments, which amounts now to 18,000 florins. They intend to begin with the pleasure pavilion of Emperor Ferdinand I., in the palace gardens at Prague—a beautiful structure in the best Renaissance style, which has been already perfectly restored, and which the Union intends to have ornamented with frescos from Bohemian history. The estimated costs will be 30,000 florins.

Newly-discovered Works by Raffaelle and Michael Angelo.—The picture-dealer, Mr. Fabri, at Rome, has discovered a portrait by Raffaelle, representing Cardinal del Monte, which is very similar to that of the fresco of the Vatican—representing the laying down of Canonic law. It is a spirited, sharp countenance, exhibiting, in those parts which have not been injured by restoration, those high art-qualities appertaining only to the great Urbinate. To the right a landscape is seen through a window, rich in all the delicate fancy of the great artist. The other work, perhaps even more important and scarce, is a picture by Michael Angelo, representing Christ laid in his grave. Of the deep sentiment, which this highly original composition displays, no words can render a proper account; and it is expected that shortly, at least, an outline will be published. This picture, hidden under the bedaubing of a modern *ristauro*, had been bought by a dealer amongst other refuse of the Fesch Gallery, from whom it was purchased by Mr. M'Pherson, an English artist. A label of tin on the back of the canvass, with the lilies of the Farnese family, shewed that it had belonged to that collection, and thus led to the discovery of its great value.

INDUSTRY AND ART.

On the 13th instant, Mr. G. Wallis, the late principal of the Manchester School of Design, delivered a lecture at the Bradford Mechanics' Institute, on the fine arts and their application to industrial purposes. In showing how the arts served to increase our wealth, and the value given to our manufactures, by brain labour, the lecturer produced a French miniature jug, beautiful in design, and stated that the clay of which the jug was composed would cost about half a farthing, whereas by the brain labour of the designer, its value was increased to half a crown. The material form of another jug had, in like manner, had its original value of a farthing increased to seven francs (5*s.* 10*d.*) in consequence of the colours which had been bestowed upon it in ornamenting it. He stated that there was an indisposition, from the non-appreciation of the works of art, to pay the high price for their embellishment which our continental neighbours, whose taste was educated, paid for them; and he said that they might depend upon it, that Englishmen would produce works equally as beautiful in the art of design as the French, when they had equal encouragements, and when the people could appreciate the truly beautiful. The English manufacturer seemed to lose sight of the fact that, if he produced a costly article, he must look to his customers for an increased return for the outlay made, in order to increase the value of the raw material; for instance, there was a beautiful design in paper before them; the English manufacturer dare not attempt to produce it, if it would take more than twelve blocks, in order to print it, but this design would take 450 blocks, and the French manufacturer produced it, because he knew its value would be appreciated amongst a people who had a love of art, and he would find a ready sale for it. It was a very unfortunate thing that the manufacturers in this country seemed to have a fear to produce the higher specimens of art; and it arose from the fact that they did not understand it. Our continental neighbours did not fear to produce a work at the cost of a few hundred pounds, because they knew they would command a better sale. But a necessity had arisen within these few months, in the relaxation of commercial restrictions, why we should no longer look to our neighbours, but depend upon ourselves for the production of materials equal in art to our neighbours, and he would urge our manufacturers for the coming struggle, for they had nothing to fear if they set about this in good earnest, and with a determination to produce specimens of high art. He contended that the embellishment of the works in use in daily life must henceforward be one of the objects of our study; and that our artisans must become artists as well as artisans, and be able to cultivate and derive increased enjoyment from the works of art. Our manufacturers, too, must become artists. The manufacturers of Lyons were generally artists: and many houses had obtained their high position from the superior order of the designs of their principals. To shew there was no lack of ability in England, he stated that, during his connection, for the last five years, with several Government schools of design in this country, he had found only four persons, out of the large number of 1,500, who had an incapacity to make any progress. If he were to state that, among this number, there were fifty more whose friends he would have advised not to let them engage in such studies, he would be exceeding the number. This was the result of his own experience—four only out of 1,500 discovered an incapacity; and he offered this statement to those who might doubt our fitness to excel in the fine arts.

In the course of the lecture he very rightly contended, that there were infinitely higher considerations involved in this question than those relating to our position and well-being as a commercial nation; and he shewed that the fine arts exerted a great moral influence over social life, and that the man who could admire the beautiful in a picture or a statue had opened up to him rich and inestimable sources of enjoyment. As a social benefit he advocated the extension of the fine arts; and he instanced the difference of feeling with which a person sits down to table, though the edibles were only scanty and common, in a room decorated and furnished with taste, from that of sitting down in a room disorderly and dirty.

HONOUR TO THE FAIR SEX!

At the risk of vexing some who would not have their good deeds brought too prominently forward, we cannot avoid making honourable mention of the remarkable perseverance and devotion of the daughters of General Simcoe, who distinguished himself in the American war. These ladies, on the ruins of the old abbey of Dunkswell, near Honiton, have erected a church, for which they worked all the stone with their own hands. A large drawing-room, commenced by the general, and not finished, served for the *atelier*.

We have a worthy companion for these ladies, whose names we mention with all due respect, in Miss Rickards, of Stow Langtoft, Bury, who has, with her own hands, as we hear, glazed all the windows in her father's church with stained glass, painted and burnt by herself!

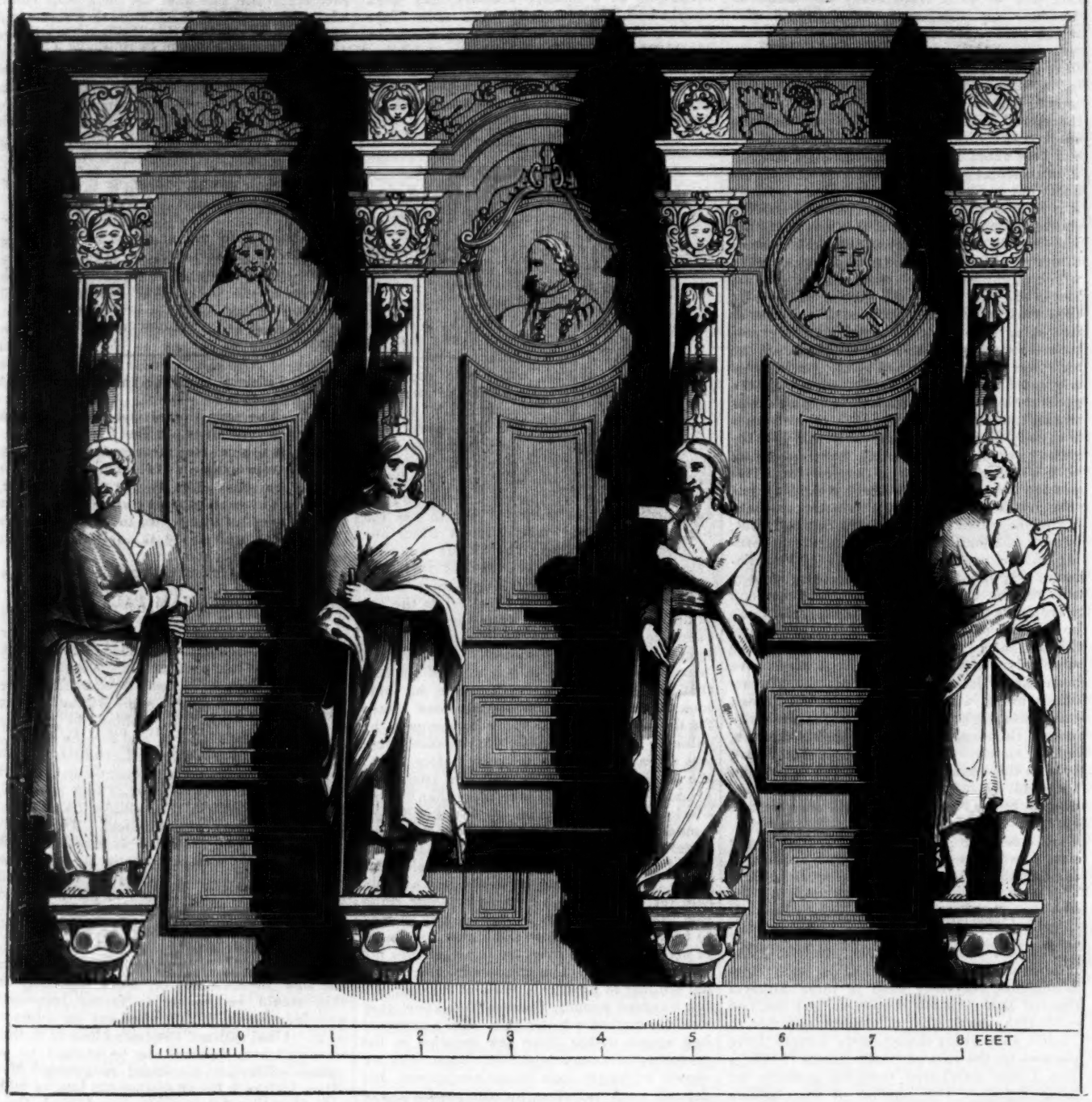
BUCKINGHAM PALACE.

We find the following in the current number of the *Art-Union Journal*.* Our contemporary need not fear that we shall let the matter rest.

"While some have been volunteering their ideas both for a different appropriation of the present palace (viz., that it should be given up to the National Gallery), and for the erection of a new one, a very lofty and extensive hoarding has been put up; consequently all doubt as to the matter of alteration is now removed, although the result of the intended transformation is exceedingly problematical. The hoarding, indeed, has answered admirably, for it seems to have most effectually screened the whole affair from further public notice and animadversion, those who had previously so much to say being now silent; which surely ought not to be, as it should be pretty loudly demanded that the public should be let to know in time—that is, at once—what the design for the new façade really is; more especially as they would be likelier to favour increased grandeur for the design, than any curtailment of it. One national structure there is in this country which deserves to be studied by a palace-builder; so we would recommend Mr. Blore, before it be altogether too late, to take a few lessons of the grandiose and scenic from Greenwich Hospital. We fear, however, that the original littleness of manner and *mesquinerie* of ideas, will extend their contagion to the new range of building; because it may be presumed that the additional rooms will be only subordinate ones for purposes of increased accommodation; consequently the number of the windows will be greater, and the size of them less, than comports with architectural dignity. Even if we may not know what the design itself is, it is highly desirable to know who sanctions it, and whether any one besides the architect himself is responsible for its merit and its satisfactoriness—that is, its satisfactoriness to the public, who, whether they are, or are not, allowed to express any opinion now, will exercise their right of opinion pretty freely hereafter. If the public are content to give Mr. Blore a *carte blanche*—although their experience of modern palace-builders might fill them with mistrust—they ought to be prepared to abide by their bargain, let it turn out whatever it may."

* The editor of the *Art-Union Journal* seems determined to spare no pains to render his elegant work popular. He announces for the new year a series of portraits of artists (a worthy thought), a series of historical pictures engraved in line, an almanac in colours, a series of papers by Dr. Cooke Taylor on the French manufacturing towns, another on forms from the antique, by Mr. Fairholt, and a continuous story from the accomplished and good Mrs. S. C. Hall, illustrated by Mr. Noel Paton.

CARVED WOODWORK IN ANTWERP CATHEDRAL.



ANTWERP AND ITS CHURCHES.

Although Antwerp may not present, to the eye of the artist, such an appearance of antiquity as Ghent, Bruges, and other towns of Belgium, or that air of comfort and elegance so observable in Brussels, yet it is impossible for a stranger to behold, for the first time, the many churches, palaces, and other public buildings, of the extent, magnificence, and solidity which characterize those of Antwerp, without surprise and admiration; and these feelings will be considerably enhanced if it is borne in mind, that many of the fairest places in the city were erected in seasons of tumult, and amid civil and political conflicts. If we consider the great commercial advantages Antwerp possessed, we need not wonder that it should have attained to that pitch of wealth and grandeur which has always been found most favourable to the encouragement and development of the fine arts. In painting, it went hand-in-hand with Italy, and supplied England with a succession of able masters, who became the favourites of the sovereigns they served, and were the means of diffusing a love of art throughout the land, which has ever since been on the increase. Nor was it behind in architectural skill—in the fourteenth and fifteenth centuries it produced those grand examples which have since been the admiration of all Europe.

It is almost impossible to give a just idea of the beauty of the churches here; it is very easy to call to mind the effect produced by each noble pile—the rich windows of the one, the graceful arches of another, the wondrous aisles of the cathedral, or the richly carved confessionals of St. Paul—all come readily back to one's own eye, but are so difficult to put fairly before the eyes of another. This is perhaps of less importance, now that Antwerp is within a day's journey, so that nearly every person may see and admire for himself.

Sir Walter Scott, no mean authority in such matters, declared that the Cathedral of Notre Dame was one of the grandest pieces of architecture which Europe could shew. In point of size alone, it must always excite astonishment, its length being about 500 feet, and the breadth, exclusive of the transepts, about 250 feet. The height of the nave is said to be 360 feet, and many of the noble piers which support the vaulting are twenty-seven feet in circumference.* Every other part corresponds as to size and magnificence. The tower is not to be surpassed for beauty of design, although at a distance the great profusion and delicacy of the ornament render the outline rather confused. Had both towers been completed (which was evidently the intention), the west front would have been unequalled.* It is much to be regretted that the effect is much impaired by some very mean houses built against the base of the towers; these should be at once removed, and the whole front undergo the same careful restoration as that of St. Gudule, at Brussels.

The interior of the choir has been much improved by the addition of a row of stalls on each side, with canopies of rich tabernacle work. These are of very beautiful design, and of such delicate execution as to afford a convincing proof that the Belgian artists have lost but little of their skill in wood carving.

Here, as in most of the churches, there is a great variety of confessionals; it is in these and the pulpits that the finest specimens of wood carving are to be found: the designs are varied in every case, but the merit of the execution is equal in all. The one chosen for the present illustration stands in a chapel of the south aisle of the nave, and is a fair specimen both as to design and execution; it calls for no

* The Norman piers in the nave of Gloucester Cathedral are twenty-one feet in circumference.

* It is curious to observe how many of the finest towers in Belgium are in an unfinished state; the magnificent tower at Mechlin but little more than half the height intended; the two towers of St. Gudule, at Brussels, and the south tower at Antwerp.

SIDE ELEVATION.

particular remark, except that the two centre figures project a little before those on each side. As was mentioned in another case, the centre division is occupied by the priest.

Every one is aware that this cathedral contains two of Rubens' finest paintings, "the Elevation of the Cross," and "the Descent from the Cross;" the latter of these was taken by Napoleon to Paris, but restored at the peace of 1815. Besides these splendid productions, there are many others of great beauty, forming one of the most extensive collections possessed by any church in Belgium.

Another interesting object in the church, is the tomb of Quentin Matsys, known as the Blacksmith of Antwerp. Sir Joshua Reynolds, in his discourses on the fine arts, mentions him as a great painter; and those who have seen the tomb of Edward the Fourth, at Windsor, (if by him) will willingly bear testimony to his skill as a smith; it is almost as delicate as lace.

The church of St. Paul will well repay the stranger for a lengthened visit; it contains two fine rows of confessionals, each one surmounted by a good picture. In the inclosure around this church is what is called a representation of Calvary; it is reared against the walls of the church. There are more than sixty figures, of the size of life, representing patriarchs, prophets, and apostles; some of the groups have a bold and graceful outline. The entire area is converted into a sort of pantheon of saints, statues of half the calendar being stuck about in all directions.

The church of St. James is considered by many persons the finest in Antwerp. Roscoe in his "Tour through Belgium," gives a fine description of it; he says, "the splendid mausoleums, pure rich wrought marbles, bold sculptures, and brilliant paintings, interspersed through eighteen chapels, and twenty-two altars, present one magnificent coup d'œil, the effect of which nothing can surpass. Even the choir, differing from other churches, is beautifully decorated with every attraction of art that can lend a charm to religious sanctity. The splendid confessionals, the beauty of the statues and paintings on all sides, the exquisite skill and beauty of the carvings, the subdued and mellow light thrown over the whole from the majestic windows, give it a hold on the imagination and the feelings not to be experienced in any other place." In a chapel behind the choir of this church, is the tomb of Rubens and his family.

But it is impossible to mention all that is worth seeing in the churches of Antwerp. We can only advise those who have the leisure, to spend a week there; they will find more than sufficient to occupy them pleasantly and profitably, especially if they take a sketch-book with them, as recommended in a former number.

PATENT ORNAMENTAL TILES.

Sir,—The very liberal and courteous tone of manner you evince, on every subject which has for its design the advancement of art or science, especially in its relation to architecture, emboldens me to intrude upon your attention the result of some considerable labour on the subject of tiling. In the pursuit of this I have been guided by the following ideas, viz.: security, economy, taste.

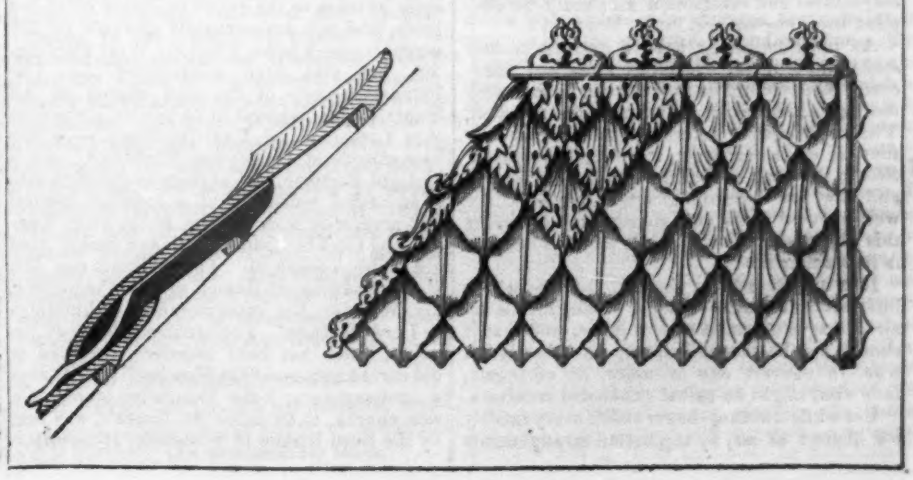
Hitherto the style of covering buildings seems to have been the victim of necessity rather than the well-regulated result of choice or design.

About three years since I was the inventor and patentee of a tile, which claimed many advantages over those in common use, being provided with a coupling joint of inverted fillets, somewhat similar to the "Italian tile:" but in *practice* I discovered many serious defects—their large *flat* surface being very difficult accurately to manufacture, besides insecure when on the roof, in consequence of the fractures to which the inverted fillets were so continually liable, besides thus forming an inducement rather than a prevention to the admission of water.

The tile to which I now solicit your attention is the result of practical experience and observation, by which these evils are entirely obviated, the manufacture facilitated, and more perfect security obtained when on the roof, besides being much lighter, more elegant and original in their character, and capable of a greater variety of style, though of one uniform size and gauge—a feature not possessed by my former patent tile, though of paramount importance.

In addition to the entire curvature of surface, which provides an equal distribution of water over each tile, the concave and convex overlapping, while it not only prevents leakage, through driving rains or capillary attraction (an evil, though frequently unobserved, yet of very common occurrence to covering by the

PATENT ORNAMENTAL TILES.



overlapping of flat surfaces), is not liable to the misfortunes to which the fillets were so constantly exposed.

Its cost is comparative, as much depends on locality, but in most cases a saving to the extent of two-fifths may be effected on plain tiling, and one-fourth on ordinary slating. As these tiles may be manufactured where the transit of slates would be heavy, a greater proportion of saving would result; and then as to the style, these tiles may be varied to suit any description of building, whether ornamental, modern, or antique, whether it regards colour or design. The accompanying sketch shews tiles in the form of the wood ivy leaf, and the oak.

REED.

Hamworthy Tile Yard, Poole, Dorset.

FACILITIES AND DIFFCULTIES OF VENTILATION.

SOME have denied the necessity of making provision for change of air, thinking, that the general laws of nature preclude the idea of inconvenience or ill-effects upon the general health; and, perhaps, this is in part true, or mortality must else have been greater.

Chemistry shews that the general laws of nature may be interrupted; and the discovery leads to the detection of subordinate laws. Animal life cannot exist without oxygen; combustion also requires the same principle. The products of the lungs by respiration have taken away life; the products of combustion extinguish flame. Animal life, and it may be called chemical life, are thus supported and terminated by the same laws.

Liebig says, animal life is a kind of combustion; and many must have felt the general effects of an unusual exposure to fresh air; and those unacustomed to travelling, are surprised at the influence of fresh air in producing fatigue, being sensible that bodily exertion could not have been the cause. The effects upon the system are usually increased appetite and improved general health.

In a crowded and highly illuminated apartment, we have, from two sources, an enemy to animal life; the products of what has been called animal, and that of common combustion. These principles, when present in any considerable degree, weaken the powers of nature, by removing or modifying the general laws which preserve health.

Ordinary apartments are generally healthy, under ordinary circumstances. It is only when there are a number of persons present, that more air is consumed and spoilt by respiration, and other causes, than can be renewed by the usual architectural arrangements.

If the draft of chimnies were increased, where such inconveniences were likely to arise, a ventilating power would be found equal to the difficulty. To increase the draft of a chimney, it is not sufficient to remove all possible obstructions to the ascent of rarified air, but also to make arrangements for a proper supply of common air to replace the loss. If a chimney be supplied freely with air, it will transmit a much greater volume than if the supply be niggardly, or, as it is under ordinary circumstances, strangled. Chimney draft has, then, a scale of power, from the free supply, to that point when the supply is nil, and the unascensive products extinguish flame.

The united draft of a number of chimnies, with combustion going on, is considerable: making arrangements for a supply of air to one or more separately is not sufficient; for correctness and satisfaction all should be supplied from one source.

As most buildings have a greater or less space unoccupied, except as halls and staircases, these should be the reservoir from which the respective apartments may be supplied. The advantages of internal over external ventilation will be apparent, when it is considered, that in the one, should the atmosphere be wet and raw, an opportunity offers itself, by the well-warmed halls and staircases, to correct this objectionable state, while by the other this is impracticable.

It is unnecessary to observe, that the whole interior of a house should communicate by air passages of some sort or other, and that it should not be the endeavour, unwittingly 'tis true, to convert one or more, or all rooms, into what might be called exhausted receivers.

But while dwelling-houses offer every facility for change of air, by the better arrangements for combustion, the same cannot be said to be the case with some buildings of greater magnitude. Churches and chapels are mostly without chimnies, and when they do not possess towers or steeples, the which to contain a ventilating tube of convenient large diameter, the difficulty is considerable. Opening the windows on both sides the building, may assist to cool the heated atmosphere; but if there be no wind, or artificial or mechanical means, to produce an agitation of the impure contents, there will be little or no change. It is too much to expect that hot air which ascends with considerable velocity, should pass off laterally at the same time, or at all. As hot air ascends in straight lines, the ascent is accelerated by passing through tubes of equal diameter.

A building not possessed of a tower or steeple, may still be ventilated by placing in the angles of the building, tubes of conveniently large diameter, which should have their commencement a little above the highest breathing point, and terminate through the roof. Niches and canopies offer an ornamental commencement to the tubes.

Should a chandelier be placed under the opening of the tube, the acceleration of change will be in proportion to the amount of combustion. To double the velocity of the escape, will be to square the motive power. C. F.

Chelsea.

NEW CHURCHES IN THE COUNTRY.

THERE appear, on a general calculation, to be nearly 400 churches at the present moment in one stage or other of progress throughout the country; that is, either in actual course of erection, conditionally ordered, or privately in preparation.——Amongst the notices of those to be added to our weekly incidental lists, taken from the local papers, it is strange how few there are in which even the most insignificant and accidental mention is made of the name of that anomalous and superfluous adjunct, the architect, to whom all parties interested were *only* indebted for the idea, the design, the head-work of the whole of that construction, of the foundation or completion and possession of which, in most cases, they are in these notices in the very act of publicly glorying and boasting, while detailing in the fullness of their gratitude to all concerned, even the most paltry contribution of pulpit cushions, linen drapery, kneeling hassocks, and other laudable enough endeavours of those "into whose 'hearts' it has been put, to 'beautify the House of the Lord;'" that house for the very idea, and architectural beauty, and elegance, of which, as it may be, they appear to be, after all, so thankless. This is a "great fact" of a very singular and unaccountable description, which well merits a niche amongst the "curiosities of journalism."——On the 20th ult. the chapel of St. John, the Evangelist, at Stoke-row, parish of Ipsden, near Wallingford, was consecrated by the Lord Bishop of Oxford.——In the hamlet of Seer-Green, parish of Farnham-Royal, Bucks, the new church erected from designs by Mr. James Deason, has also been consecrated by the Bishop of Oxford, in presence of a numerous assemblage of clergy and others. It is in the early English style of architecture, and consists of a nave, chancel, porch, and vestry, and a stone bell turret at the west end. Including chancel, it is 80 feet long, width 26 feet, turret 60 feet high. The interior is fitted with open benches to the entire exclusion of closed pews, and will accommodate upwards of 200 persons.—— Christ Church, West Fordington, has also been consecrated.—— The foundation-stone of the new church of All Saints, Leeds, is about to be laid on a site near the York-road, at Pontefract-lane.—— The new church at Durweston, Blandford, rebuilt by Lord Portman, and opened on the 25th ult., is an edifice consisting of a spacious chancel and nave, with a south aisle, in the early English style. The chancel arch and timber roof are highly spoken of. The architect was Mr. P. C. Hardwick, of Russell-square; the builder, Mr. Webster, the superintendent of buildings to Lord Portman. The architect designed the pulpit, which has been massively executed in old carved oak.——"On Monday" (week), says a contemporary, "the foundation-stone of a new church, to be called St. James's, was laid by the Lord Bishop of Woodside, Horsforth."——The Independent Chapel at Rawden, the foundation-stone of which was laid in March last, is now nearly completed. The chapel, vestries, class-rooms, school-rooms, and manse are all in the Norman Gothic style.——The work of restoration at the parish church of Bridlington is progressing. A new roof over a portion, comprising nearly one-third of the whole length, is now drawing toward completion, after a design by Messrs. Sharpe and Paley, of Lancaster. Mr. Thomas Hodgson, of Bridlington, is contractor for the wood-work. The present building is only part of the ancient fabric, including no more than the original nave. The length of the present interior is 185 feet; when entire, the length extended to about 337 feet, being 152 feet more to the eastward than its present limits. The breadth of the interior, including the side aisles, is 68 feet, and the height of the walls 67 feet. From the dimensions here given, the reader will see that though much reduced in size, it is still a spacious edifice. Indeed, from the circumstances of its magnitude, and there being no funds appropriated, either at the dissolution of the monastery or subsequently, for its repairs, there is no wonder that it has been disfigured and dilapidated through the scanty means afforded for repairs. Many of the clerestory windows on both the north and south sides are walled up between the tracery, as is also the case with all the upper compartments of the large west window.——Stert church having been almost wholly rebuilt, was re-opened by the Lord Bishop of Salisbury, on Friday week.——St. Martin's Church, Zeals Green, Wilts, the first stone of which was laid rather more than twelve months since, was also consecrated on Wednesday week by the same bishop.——The new church opposite the railway station at Heaton Norris was consecrated by the Bishop of Chester on Wednesday fortnight. The first stone was laid on 29th July, 1844, by Mr. Wilbraham Egerton, of Tatton Park, who gave the land, endowed the church with 1,000*l.*, and contributed 200*l.* to the cost of the spire.——The foundation-stone of a new church, to be built at the expense of the Rev. Davis Griffiths, vicar of Ystrad, has been laid at Cribyn, Cardiganshire.——The old church at Flint (St. Mary's), is about to be pulled down to give place to "an elegant and capacious edifice." This church is one of very early date, being supposed to be Capella de Colsal, belonging to the Abbey of Basingwerk, mentioned in the charter of David ap Llewellyn.

DECORATIVE ART SOCIETY.

OCT. 28th; Mr. Fildes, V.P., in the chair. He congratulated a numerous meeting on the auspicious commencement of a fourth session, and observed, that the number of persons who were that evening proposed for election as members and subscribers, conveyed an assurance that the past efforts of the society were now receiving a response that would soon place it prominently amidst useful institutions. The objects of the society were described as assuming a definite and practical basis; the recently commenced library, in connection with the society, was also adverted to, as being intended to consist of all works *illustrative of the arts and sciences*, thus offering to the members a treasure which no other institution at present did at a moderate charge; and he trusted that donations to the library would rapidly facilitate the benefits derivable therefrom.

A paper was subsequently read by Mr. Crabb "On the application of colours to manufactures," illustrated by many rich specimens of silk fabrics. The writer noticed the singularly varied opinions prevailing upon the ordinary properties of colours, and asserted that our manufacturers generally gave but little attention to the subject, nor even to the Government School of Design, which might be made capable of administering fully to their wants, provided these were clearly understood by a competent council, at the head of a proper and efficient school of design. In referring to some brocaded silks of the 15th century, he considered that they might be regarded as displaying some of the finest efforts of combined artistical skill and mechanical ingenuity; supporting the leading character of the design, preserving the style in its integrity, with details, promoting a rich and superb effect. This union of various

qualities being an exemplification of that which absolutely constitutes and deserves to be received as *manufacturing design*. Mr. Crabb next selected some modern French silks, and directed attention to the skilful combination of colours, the strikingly effective contrasts, and the precision with which various styles were defined and adhered to. He could not refrain, he said, from deploring the system adopted by English manufacturers of copying and reproducing French patterns, and he inquired, "Is it not extraordinary that in the course of manufacturing arrangements, a legitimate provision for design is scarcely considered essential? being treated rather as an expensive incumbrance than as contributing a final impress of beauty and usefulness; thus evincing less solicitude about the artist than the mechanic."

This apathy, he said, exists very extensively among manufacturers; and until a change takes place, men of superior and fitting intelligence will not devote their energies to manufacturing design.

NOTES IN THE PROVINCES.

A few remarks on "new churches in the country," with a collection of notes on recent erections, consecrations, restorations, &c. will be found under a separate head.——A sudden subsidence of earth, to a depth of many feet, and in an area of about 50 feet in diameter, lately occurred in the midst of an ornamental garden, in the vicinity of Birmingham, where an old coal-pit, closed for the last 13 or 14 years, had undermined the ground. The more immediate cause of the subsidence, or rather of two successive subsidences which occurred, is supposed to be the removal of a stratum of water from beneath, on the opening of a new pit adjoining. A number of tenements on the brink of the subsidence had a narrow escape, and a high wall was thrown down. The only habitation destroyed, however, was fortunately a pig-stie, and the only life lost, that of its inhabitant, the pig, which was in all probability destined to be swallowed up at any rate. The tenements remained unoccupied, a further subsidence being expected.——The Manchester Parks Committee, having effected its objects in a speedy and business-like manner, has been finally dissolved, leaving on hand a balance of 114*l.* 6s. 1d., as "a nest egg for future contributions towards the formation of another park." The whole business has been done in one year for subscriptions and government grant, and one year for the purchase and laying out of the grounds and the completion of the whole work.——Mr. Bennet, M.P. has contributed 100*l.* to the fund in course of accumulation for the complete repair of the old parish church of Tisbury.——The new additional works of the Lincoln Gas Company are now in working order; and the quality of the gas provided by the company since the reduction of price from 10s. to 7s. 6d. per 1,000 feet, is said to be decidedly improved, and the inhabitants are repaying the twofold advantages thus conferred by a considerable increase in the consumption. The Nottingham Railway terminus is to be provided with 200 lights.——The works of the Yarmouth Jetty are nearly completed. "For this work," says the Report of the Standing Committee of the Haven and Pier Commissioners, "four different tenders had been forwarded to the commissioners. The lowest was 645*l.*, the next for 675*l.*, a third was 911*l.*, and the highest, which was from a Mr. Beechey, was 1,180*l.* The commissioners selected the lowest, but the person who had sent in the tender was not able to procure sureties for the due completion of the works, and it was consequently offered to the next lowest, Mr. James Chapman; but he afterwards declined doing it at less than 800*l.* In consequence of this the committee requested Captain Smyth, the harbour-master, to attend upon them, and give his estimate of the works. Captain Smyth did so, and his estimate was 715*l.* 5s. 6d. Mr. Teasdell also, then deputy-engineer, gave in his estimate, which was 694*l.* The consequence was, that the commissioners determined to purchase their own timber and other materials, and to contract only for the labour, and the whole was done within the estimate." The jetty has been carried out 60 feet further into the sea. The commissioners agreed to the formation of the Norfolk railway-bridge at Yarmouth Harbour, which we recently noticed. In deepening Breydon, 63,000 tons of soil have been already removed. The cost of deepening to the extent of 18 inches will be 2,700*l.*——The Hull town-council have again taken up the subject of new markets, which they had voted down. The corporation-surveyor, Mr. David Thorpe, has been instructed, by vote of the council, to prepare plans and estimates, which will be ready in six weeks or two months.

RAILWAY JOTTINGS.

A machine has been invented for registering the velocity of railway trains during each half mile of their transit, with the length of stoppages at stations, &c. It is even expected, somehow, that this vigilant spy will be often able "to assign correctly the nature and cause of an accident" which may happen during the transit; though, itself, slyly ensconsed "under the seat of a railway carriage," where it is to be ever busily engaged in writing, or "marking on a strip of paper," all that may transpire. ——The directors of several companies, it is rumoured, contemplate the adoption of the liberal and considerate practice of the French in providing for the comforts of second class travellers, by lining, padding, and supplying their carriages with cushioned seats, glass windows and lamps. Surely the third class cattle pens on many lines will never stand in the face of such an improvement. Should not the present second class be thereupon handed over to the third?——A renewed attempt is being made to convert the Regent's Canal into a railway. Sir Peter Laurie, in exciting the Marylebone vestry again to resist the attempt, assured the vestry, that "if it was allowed to be carried into effect, it must pass under the newly erected church in Aberdeen-place, and also under Alford Lodge, the foundations of which would be entirely destroyed thereby."——The evidence adduced before the Metropolitan Railway Termini Commission has been printed, but the mere minutes of the mass monopolize 264 folios of space, the appendix 44 more, and the index itself 66 and upwards.——The Ipswich and Bury line it is expected will be "ere long" opened, notwithstanding obstacles, amongst which, besides those especial ones already more than once notified to our readers, we observe "a scarcity of journeymen bricklayers," want of timber, and local contentions regarding the position of bridges. As to the difficulties in the construction of the embankment at Stowmarket Morass, "it was reported in the early part of the present week (now past) that the new surface was again sinking, but this does not appear to be the case, and no apprehensions are entertained that the difficulty is not overcome."——It is stated in one of the accounts of the destruction of the viaduct of Vierzon, that, only two days before the disaster, the engineer-in-chief of the government wrote to the directors of the centre railway, stating that he had just examined it, and could pronounce it to be then in so solid a condition that nothing could affect it. The cost of this viaduct to the government is stated to have been at least thirteen hundred thousand francs.

It appears that at least a few threads of the ideal tissue of telegraphic wires with which the metropolis is to be interwoven, are to be in earnest, forthwith prepared by the Electric Telegraph Company, who mean to establish a central telegraph station at the Company's Depôt, in the Strand, by means of which, communication will be established between that one point, as the centrum commune, or brain proper of the country, and its various extremities. The South Western extension will be first struck out along the Waterloo-bridge and road, by Kennington-road and lane, to Nine Elms. Its completion is anticipated in course of three months, but the wires will not be run out on the other lines for a much longer period. The Government have even caught the infection, it is said, and have directed the Company's officers to report upon the practicability of extending the "main" telegraph to the principal depôts of the Government.

Holborn Hill.—We have received several communications on the means of overcoming this difficulty, and will consider them.

RIGHTS OF ARTISTS.

Sir,—In discussing the Hyde-park-corner absurdity, too much stress cannot be laid on the moral wrong done to Mr. Burton. No sooner is a line of railroad projected than we are deafened with the shrieks of landed proprietors, the alarm whistle of vested interests. The rights of private individuals are jealously guarded, and compensation granted for what often turns out to be a benefit instead of an injury. No such consideration is evinced to the artist; his designs are seized upon, added to, curtailed, altered in any way that suits the caprice of a committee, without the slightest apparent consciousness, on the part of the perpetrators of the act, or the public, who witness it, that there is any right or wrong in the matter. With the merits of the statue we have nothing to do, it is with its position that we quarrel; so long as it is allowed to degrade Mr. Burton's arch into a mere pedestal, the feeling of outraged justice will, in every well constituted mind, outweigh even that of offended taste.

Let us labour to impress on the nation that the works of the poet, the painter, the architect, offsprings of man's head and heart, produced at the cost of thought, study, and self-denial, such as the world can never know, are property at least as sacred, and no more wantonly to be tampered with than houses, lands, or the Three per Cents.—I am, Sir, &c.,

Oct. 31. M. R. W.

DWELLINGS FOR THE WORKING CLASSES.

The houses built at Birkenhead, under the directions of Mr. C. E. Lang, for the dock labourers, are now completed, and have been visited by Lord Morpeth and others. The *Times*, giving an account of them, says, "The buildings are four-storied, of red brick, with light sandstone window-cills and copings. Their external aspect would suggest to a Londoner the idea of a block of buildings constructed for professional persons, for an inn of court or Chancery, and, with little addition and variation of ornament, they might match with the new hall of Lincoln's Inn. They are, in fact, flats or sets of chambers, consisting of two sets on each floor. Each set consists of one living room and two sleeping rooms. The floors are of arched brick. The living room is floored with a hard Welsh fire-brick tile; the sleeping-room floors are boarded. The staircases are of stone, with iron balustrades. The flat brick arches of which the floors are constructed, are tied together with iron ties, and the whole building is fireproof.

The most important points of improvement are, however, those in which some principles of the sanatory report in respect to the means of cleansing and ventilation for the working classes, are carried out. Each set of rooms is furnished with a constant supply of water, and also with sinks for washing, and a watercloset, and means of communication with a dust shaft from the whole set of chambers, by which all dust and ashes might be removed at once from the apartments without the necessity of the inmates leaving them."

"The sinks in each room were trapped with bell-traps, as were all the openings to the drains and the gully-shoots in the paved courts and thoroughfares. A constant supply of water was secured, the house-drains were well flushed with water, and cesspools were entirely abolished."

"The rents charged were from 3s. 6d. to 5s. each set, according to its position. But this included a constant supply of water, and the use of one gas-burner in each set of rooms, and all rates and taxes, and moreover two iron bedsteads, and a grate with an oven, and convenient fixtures."

Mr. Chadwick, who was one of the party, whilst expressing his warm concurrence as to the advance made, stated his opinion that further improvements might yet be achieved, especially in the mode of warming and ventilation. The ventilation was at present with cold air, which all experiments showed the inmates would in winter time try to stop, and succeed in doing so. The egress of vitiated air was, to some degree, dependent on the perception and care of the inmates. He considered that the ventilation must be self-acting, and that in such a range

of buildings it might be accomplished with air that was warm as well as fresh, of which practical instances were in progress. Tubular chimneys of fire-brick, which had been in use in various places, with a much smaller bore, would "draw" better, and with a careful disposition of fire-brick over the fire-grates would give greater warmth with less fuel. He pointed to marks of damp on the stairs, opposite to the ornamental sandstone copings, as a defect incident to the use of so absorbent a material. The thickness of the walls diminished the damp or the expenditure of fuel to prevent it, from the use of so absorbent a material as the common brick. But by the use of a harder, or machine-made brick, and by the construction of hollow walls, warmth or dryness might be obtained with a less expenditure of fuel.

The size of the chimneys, Mr. Lang, the architect, pointed out, was due, with other errors, to ill-advised building regulations. The materials of construction, he said, were the best the district afforded.

Correspondence.

WORKS FOR PRACTICAL MEN.

Sir,—I am a practical working mechanic, a millwright and engineer, I have been in the habit of taking in mechanical works of course, for the purpose of gaining information; these books I have read over and over again, and now I am equally as forward as I should have been if I had never seen these books. I will take one work for instance, the "Engineers' and Machinists' Assistant," in the preface of which, it says, the work is intended for the humble artisan; and I will ask you, Sir, whether Algebra, Logarithms, and Euclid, are to be found in a factory of commonly educated men? Where is the utility of a man of the same class as myself going to the expense of taking in these works, when, comparatively speaking, they are useless to him? I am not the only individual who complains, there are some twenty or thirty in the same factory, who have been similarly disappointed; why not give the various calculations in plain figures, such as decimals, and without algebraic signs? I am sure they might be dispensed with, were it the wish of the author to instruct and enlighten the ideas of the working mechanic.

Works of this kind are not fit for factory perusal, for the man that comprehends them is a man of education, a man of great abilities; in fact, he must be equal to the authors in his acquirements of knowledge. Sir, I feel certain, that if there was a work brought out, more simplified, and with less abstruse language and algebra, it would be much more supported by the practical working men, than works of the present day are.

Hoping that you will grant the favour of inserting this humble letter in your columns, as by so doing you will oblige some forty or fifty others besides.—I am, Sir, &c.

Oct. 23rd, 1846. J. P. K.

SANATORY STATE OF BUCKINGHAM PALACE.

Sir,—In my last hurried letter I omitted to mention the additional argument against the sanatory state of Buckingham *Palace*, that during the late severe hail-storm, the *basement* of both wings was under water; and to whatever cause this casualty may be sought to be attributed, the circumstance can only tend to sustain and strengthen my observations, as to the unfitness of the *palace* as a royal residence, independent of the nasty neighbourhood by which it is so closely invested. It is impossible to expect either good drainage or ventilation in a building so squatted down in the ground; and to attempt to mend so grievous an error is futile;—low and damp it is,—and low and damp it must remain,—there is no help for it now. Let me beg of your readers to refer to the last number but one of The Builder, and look at the view of "The University Galleries and Taylor Institute," lately erected at Oxford, and observe how differently, but how judiciously, Professor Cockerell has elevated the basement of that building, giving it an improved character by elevation, as well as affording increased room. I may here remark, too, that it seems a sound and happy view, to unite two or more institutions into one fine building, which, taken singly, could not afford the same scope to the effort and skill of the architect.—I am, Sir, &c

Philo-Medicus.

IMPROVEMENT OF RAILWAYS.

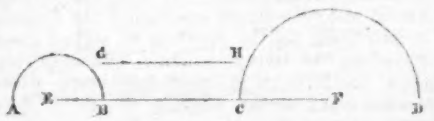
Sir,—Allow me, through the medium of your columns, to make a suggestion with regard to railways, which I think would do much towards the prevention of accidents.

What I propose is, that in the construction of all trunk lines *three* sets of rails should be laid down instead of two, so that if any repairs were wanted on one of the lines, the traffic might still go on on the other two lines, and the necessity of crowding all the traffic on one line would thus be obviated.—I am, Sir, &c.,

London. One of the Public.

A PROBLEM FOR SOLUTION.

Given the semi-circles AB, CD, connected by the line of centres, EF, and the parallel line GH, to find the centre of a circle that shall be tangential to the given semi-circles, and to the line GH. J. M.



Miscellanea.

The Park Improvements.—A correspondent (Mr. H. Whitaker), in giving expression to his approval of the suggestions in our last impression on this subject, remarks, that there is something more wanted on the path leading from Oxford street gate, namely, "a viaduct over, or an arch under, the road, with steps leading up the one and down through the other. It might be made a police-station, and a place for a respectable person to sell refreshments. Something handsome might be designed for it, and prove an ornament to the present ugly spot. The proposition is subject to many objections, but I am sure," he adds, "they might all be overcome. It is impossible to pass the place without feeling that such nuisances ought not to exist and be allowed to continue year after year, as if there were neither money nor brains in the country to cure them." We fear our correspondent has overlooked the fact, that this is but one out of many nuisances of an exactly similar order, affecting the metropolitan streets and roads, all equally demanding obviation, and all equally expensive and difficult in obviation. A precedent such as this might lead to a demand for viaducts with steps, for ascent and descent of pavement passengers, across *every* great thoroughfare; but where is the money to come from for desirable improvements such as these?

The Builder's Friend.*—Under this title Mr. H. Fitzgerald has published a table, which cannot fail to be useful. It shows in one line the relative prices plank, deals, battens, and timber, bear to each other, from 20*l.* to 45*l.* the hundred, so that on looking at it, any person about to build will easily discover which is cheapest for him to buy. For instance—

If 120	12 ft.	3 in.	11 in. plank cost £	20 0 0
120	12 ,,	3 ,,	9 ,, would be..	16 7 3
120	12 ,,	3 ,,	7 ,, ,, ..	12 14 6
120	12 ,,	2½ ,,	7 ,, ,, ..	10 12 1
This is equal to per load.....				3 0 7

The information is given in a concise form, so as to fit the pocket-book.

Truth in Architecture.—A correspondent, commenting on a recent letter in our pages on this subject, the writer of which asserts that if he were strictly to carry out the principle upheld by the opponents to his views, it would compel him to demolish his viands in a very raw and pristine state, says:—"Nothing of the sort; it permits, and indeed urges him to dress, garnish, and serve up his beef in the most refined and tasteful manner. What the principle does protest against, is the impropriety of his anointing it with pyroligneous acid, and then coolly attempting to pass it off as pickled salmon."

* Published at 2, York-street, Covent-garden.

Saxon Tower of Trinity Church Colchester.—A fortnight ago a deputation from the British Archæological Association visited Colchester, and after examining the whole of the antiquities there, held a meeting for a discussion upon them. The buildings were mentioned *seriatim*, and amongst them, the tower of Trinity Church. This, Mr. White observed, was one of the most beautiful things they had seen in the town; and if Colchester, in its guard house, could boast one of the finest pieces of Roman work, it could also lay claim to one of the most perfect Saxon Towers in England. The semi-circular doorway resembled some of the windows in Deerhurst Church, as also Aveley Church, in this county. In Trinity Church it was peculiarly marked; it was built entirely of brick, and in order to counteract the very bad construction of bricks laid to form an angle, the builders had evidently formed it of two segments of a very large circle. The little arch, at the east end, was very interesting, because it proved that not only in the Norman, but also in the Saxon times, was the tower arch thrown into the church; for there could be no doubt that the arch he had mentioned looked into the original building. The windows on the outside looked like circular openings, but in the interior they were not so; they had circular heads with two tiles on each side at the springing of the arch. This tower was one of the few specimens of Saxon architecture remaining in this part of the country; and to his mind it was one of the most interesting objects in Colchester. He hoped that neither in the re-hanging of bells, nor for any purpose, it would be interfered with. He should very much like to see the filling up of some of the windows removed, in order to see whether the cills were flat, as was the common Norman style, or considerably slanted, as were all Saxon windows hitherto discovered. At the meeting, an investigation was made of the peculiar masonry of tiles of which most of the ancient buildings in that town is composed. That of the chapel near the castle of Dover was referred to as being analogous. It was shewn, that although the tiles in form and colour resemble Roman, yet there is a vast difference in the fabric and composition, as well as in the mortar. It was considered that tiles made after the Roman model, were made in Essex for centuries after the Romans left Britain; and the county is remarkable for its early churches built of tiles and bricks.

Strength of Tubular or iron Bridges.—Mr. W. Fairbairn's experiments having, in a manner, established the general fact that hollow beams of wrought-iron are about three times stronger than solid beams of the same form (and quantity of material surely), Mr. H. Hodgkinson has been further engaged, according to the *Mechanic's Magazine*, in ascertaining whether hollow beams of an oblong, square, or cylindrical form be strongest. From the results, shewn in the following table, it will be seen that the cylindrical are, as might have been, and was, in fact, anticipated, the strongest of all, and the square next in degree.

Cylindrical tube.			
Weight of Tube.		External Diameter of Tube.	Weight of Greatest Resistance.
lb.	oz.	Inches.	lb.
47	10	2·34	31,828
45	15	2·99	37,356
59	0	4·05	47,212
64	4	4·06	49,900
Rectangular tube.			
43	14½	4· 1×4·1	19,646
65	8	8·15×4·1	23,289
82	0	8· 1×4·1	43,673
91	1	8· 0×8·0	27,545

The rectangular tubes were all of plates, 1-16th of an inch thick, and all simple rectangles, except the last but one, which had a partition into two divisions.

Mr. Ternouth, the Sculptor.—Mr. Ternouth informs us that the report of his death is untrue. The statement, which had previously appeared in several of the journals, was sent us by a correspondent in whom we had confidence. We are very glad to find it incorrect.

NEW USE FOR WATER-WORKS.—A rather novel source of mechanical power, and curious application of that power, have lately been adopted at Newcastle, on the quay of which a hydraulic crane, worked by the pressure of water in the common street water-pipes, has been erected, under the partial protection of a patent, by Mr. W. Armstrong. The pillar and jib alone appear above ground, and the application of the power to the instrument, in all its movements, is regulated with rapidity, as well as delicacy, by means of indicators, traversing circularly on engraved plates or indexes. Though not the first time that water-works have been applied in the accumulation of mechanical power, this rather elegant application of it to the ordinary business of a town, opens up a wide vista, through which may be traced the indefinite outline of multiform uses for such a convenient power, in the sphere of domestic as well as of business life.

THE ROOF OF WESTMINSTER HALL.—The celebrated roof of Westminster Hall, the span of which is among the greatest ever built without pillars, is little more than one-third the width of the Worksop Spread-oak, the branches of which would reach over Westminster Hall, placed on either side of its trunk, and have 32 feet to spare; and its extent is nearly 30 feet more than the length, and almost four times the width of Guildhall, in the city of London. The rafters of Westminster Hall, though without pillars, have massive walls on each side to support them; but the tree-boughs, of 16 feet more extent, are sustained at one end only. Architects, who know the stress a staircase, of even 8 or 10 feet in width, has upon the wall into which the side is built, can alone fairly estimate the excessive purchase which branches on either side, spanning from outbough to outbough 180 feet, must have on the central trunk.—*The Plough.*

SCHOOL OF DESIGN.—Not merely members within the walls, but every eminent artist who as yet has had a glimpse of the school, is equally opposed to the system of management. Mr. Redgrave, A.R.A., who officiated temporarily a few months back in the figure class, has addressed a letter to the premier, strongly pointing out the defects observable in the conduct of the institution.

ROYAL ACADEMY.—Mr. E. M. Ward was elected an associate at a meeting of Academicians on the 2nd. Complaints are made that other real vacancies were not filled up.

NOTICES OF CONTRACTS, &c.

THE authorities of the Stamp Office having given us notice to discontinue the insertion of our list of contracts, &c., excepting as advertisements, we, in deference to their wishes, omit them for the present, but have taken steps to place the facts of the case properly before them, and, as we hope, remove their objections. In the meantime a list may be seen at our office.

TO CORRESPONDENTS.

"*Architects' School of Design.*"—Various letters on the subject shall receive consideration.

"*A. S.*"—The architect as your agent can bind you. If he act wrongly your remedy is against him.

"*Country Subscriber.*"—The depôt is in the Quadrant, Piccadilly, next door to the County Fire Office.

"*Delta.*"—Laxton's will answer your purpose.

"*Constant Reader of the Builder.*"—The chances are that neither one nor the other would keep down the water in such a case.

"*Amateur*" shall appear.

"*Citizen.*"—His request shall be attended to in respect of future communications.

"*C.*" may rely on our never losing sight of the necessity of preserving open grounds for the use of the people. We will yield nothing quietly without a fair return.

"*Inquiries.*"—A correspondent asks for information "about a machine for making carriage-wheels of wood; the address of the party who makes the same; likewise what instrument is most approved off for enlarging or diminishing and copying drawings instead of the pentagraph; at the same time would like to know if any company or manufactory has used or lighted their premises with gas made from the Comte de Val Marino's plan, as introduced by him into London in the year 1840."

"*Philo-Kerr.*"—The price is 5s.

"*J. W.*"—The price of the Encyclopædia is 2*l.* 12s. 6d.

Received.—"A Country Reader," "Subscriber" (U.), "T. E. Carnegie," "Subscriber," *re* Holborn Hill, "Cosmopolite," "S. P.," "Amicus," "H. J. L.," "F. H.," "People's Journal" for November, "Ignez de Castro," "Pictorial Gallery of Arts" (Sculpture) Knight, "British Worthies," "Patent Journal," "A Manual of Gothic Architecture," by F. A. Paley, M.A. (Van Voorst, Paternoster-row.)

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

ADVERTISEMENTS.

DRUCE'S No. 2, WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weighbridge and draw-dock.—N.B.—Depot for Glass Pantiles.

FIRE BRICKS, Stourbridge, Welsh, and Newcastle; also Lumps, Tiles, and Clays, a large Stock of the best made Goods are selling at very reduced prices (a great reduction having taken place in freights) at WARD'S Honduras Wharf, Bankside. Windsor Nonsuch, and Town-made Oven Tiles, PP.N. and Circular Red Fire Bricks, Country Pan, Plain and Ridge Tiles, Paving Bricks, Corn Drying and Patent Malting Tiles.—Country Builders promptly supplied. Rough River Ballast for Concrete and Thames Sand, above and below bridge, by freights or loads. Prepared Sand for Plastering.

VARNISH, COLOURS, WHITE LEAD.

Genuine White Lead	per cwt.	27s. 0d.
Seconds	„	25 0
Thirds	„	23 0
Linseed Oil.....	per gallon	2 3
Turpentine.....	„	4 6
Putty.....	per cwt.	7 6
Patent Dryers	„	36 0
Oxford Oker	„	36 0

Varnishes equalled by none:

Fine Oak	per gallon	10s.
„ Carriage	„	12
„ Copal	„	18
„ Body Copal	„	24
„ Gold Size	„	10
„ Black Japan	„	10

Painters' Brushes, and every article in this branch, at the Manufactory, 87, Bishopsgate-street, Without, London.—THOMAS MILLINGTON, Proprietor.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre. Price 10s. per gallon.

TODD'S PATENT PROTOXIDE PAINT, manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation it is most preferable, being perfectly innocious.

TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the continent, are stronger, lighter, cheaper, and more durable than brass or copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames-street.

PATENT ARCHITECTURAL ROOFING TILES.—Architects, Builders, Railway Contractors, and others, may now be supplied with these very superior and truly ornamental Roofing Tiles, at the London Depôt, Essex Wharf, Strand, at the undermentioned prices. These Tiles, for security, beauty, and effect, surpass every other kind of roofing, and are equally adapted to the covering of Ecclesiastical, and other ornamental buildings of more modern architecture. They will be found far more effectual and handsome as a covering than slate, and equally cheap; and they do not subject the adjoining rooms to such extremes of heat and cold, nor occasion wet to run down within the roof, caused by condensation upon slating. These Tiles are laid on laths, like common pantiles; and although forming a perfectly close covering, admit of being effectually repaired with the greatest facility. Arrangements are in progress by the Company for providing a supply of these Tiles throughout the different counties of England in the ensuing season, and orders will be taken by the Agent for these Tiles, of a dark blue, grey, or lead colour, to be delivered in the spring, according to samples.—Prospectuses may be obtained of the Company's Secretary, at the Offices, 138, Strand, London, to whom applications for Licences should be addressed, by persons desirous of manufacturing these Tiles, for which a very superior press is provided, at moderate cost.

Price of the Tiles, Six Guineas per thousand.
to 22s. per square, for the Tudor pattern.
and 16s. per square for the diamond.
A liberal discount allowed to the Trade.

HERRING'S PATENT SAFETY WINDOWS.—No invention ever offered the advantages to builders and the public; it will positively add 5 to 10 per cent. to all houses having it, repay the cost every two years, abolish all danger to life and limb, cleaning and repairing. It is in full operation (four different ways), forms a complete ventilator and sun-blind, all simple, cheap, and effective.—Apply for licenses and to inspect its real merits, to Herring's Patent Steam Bed-feather Factory, 14, Kingsgate-street, London.

CHAS. WM. WATERLOW,

Manufacturer of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square. Well-seasoned materials, superior workmanship, lowest prices. Upwards of 400 Doors and a large variety of Sashes and Frames always on Sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 3d. per foot superficial; and borders from 9d. per foot, run; and having just built two of the largest Kilns in London, is enabled to execute extensive Orders with unprecedented dispatch, 1, King-street, Portman-square.—Terms, Cash only.

PAINTED GLASS.

THE Subscribers, who have been appointed to furnish the PAINTED GLASS for the WINDOWS of the HOUSE OF LORDS, are ready to prepare Designs adapted to every style of Ecclesiastical or Domestic Architecture, and to execute Work, to any extent, within the shortest possible period.
BALLANTINE and ALLAN, 42, George-street, Edinburgh.

TO THE PLATE GLASS TRADE.

THE BIRMINGHAM PLATE AND CROWN GLASS COMPANY, "Registered," beg to inform the Trade and Public, that the extension of their Works at Smethwick, near Birmingham, being now completed, their Warehouse, 141, Fleet-street, London, is now open for the Sale of their Crystal Plate Glass, which will be found to stand unrivalled by that of any other manufactory. They are also in a position to supply Rough Plate of any substance for Skylights or Floorings on the shortest notice.—Orders addressed to B. MOSS, Company's Warehouse, 141 Fleet-street, London, will be promptly attended to.

SASHES primed, glazed, and sent to any part of London at 5d. per foot.

BUILDERS, PAINTERS, GLAZIERS, and others, supplied with every article used in the trade upon the best wholesale terms.
FOREIGN SHEET. BRITISH SHEET.
BRITISH CROWN. PROPAGATING GLASSES.
Coloured and Ornamental Glass, Flatted Crown, and Sheet Plate, for Shop fronts, Shew-cases, &c. The largest stock of Cheap Glass in London for HORTICULTURAL PURPOSES.
Dry and Good Colours of the best quality; Brushes Dryers, and every article used in the Trade Warranted.
VARNISHES and GENUINE WHITE LEAD; MILLED LEAD IN SHEETS 23s. per cwt.; Lead Pipe 23s. per cwt. Pumps, Water-closets, Basins, Brass-work, and all materials used by Plumbers.
For complete lists priced.—Address to R. COGAN, WINDOW GLASS, LEAD, and COLOUR WAREHOUSE, 5, Princes-street, Leicester-square, London.

WINDOW GLASS, Crown Squares, in 100 feet Boxes, per foot:—

4 by 3	and under	5 by 3	.....	1d.
5 .. 3	„	6 .. 4	.....	1½
6 .. 4	„	7 .. 5	.....	1½
7 .. 5	„	9 .. 7	.....	3
9 .. 7	„	10 .. 8	.....	2½
10 .. 8	„	14 .. 10	.....	2½
14 .. 10	and under	2 feet	.....	3

Crates averaging 50 inches:—

cce	16 table	.....	each 40s.
ce	16	.....	47
Fourths	16 table	.....	65
Thirds.....	16 table	.....	78

Foreign Sheet Glass, 3rds, superior to English, in 200 feet boxes, about 16 oz. 3d. per foot; best quality, Sheet Glass, about 16 to 18 oz., in 100 feet cases, 8d. per foot: this is a most superior article, nearly approaching to plate glass.
Water-closets, Pumps, and all kinds of brass work. Sash glazing, 4½d. per foot.—Address THOMAS MILLINGTON, 87, Bishopsgate-street, Without, London.

CHARLES SMITH and SON, 52, GREAT CHARLES-STREET, BIRMINGHAM (late STANDLY and SMITH, formerly STANDLY and GALE, Bull-street), Locksmiths, Bell-hangers, Brass-founders, Whitesmiths, &c., beg most respectfully to solicit the attention of MAGISTRATES, ARCHITECTS, and ENGINEERS to their inventions for prisons, lunatic asylums, &c.

C. S. and Son will be happy to attend any committee of magistrates without charge, and submit a VARIETY of patterns of peculiar locks, signals, inspection apparatus, chapel door-fastenings, iron frames, hinges, &c., as supplied by them at the MODEL PRISON, LONDON, and TWENTY-THREE SIMILAR GAOLS, where they have given entire satisfaction.

Among other testimonials, can be shewn that of Major Jebb, attesting the efficiency of the labels, &c., invented by them.

The contracts will be executed to the approval of the inspector-general of prisons, and the architects.

C. Smith and Son also are prepared to contract for the supply of the whole of the ironmongery requisites for the residences of the nobility and gentry, churches, banks, barracks, gaols, asylums, and workhouses, including locks, bells, hinges, grates, kitchen-ranges, staircases, grates, park-fencing, fire-proof safes, bookcases, doors, metal sashes of all kinds, and every description of ornamental brass and iron work, light castings, &c.

C. S. and Son beg to refer to the extensive works performed by them at Windsor Castle, Northumberland and Sion House, Blenheim Palace, Chatsworth, &c., as a guarantee for the superiority and durability of their work, in confirmation of which numerous letters from noblemen can be shewn.

WORCESTER ENCAUSTIC TILES. Specimens of these beautiful Tiles in all their Varieties, may be seen and information obtained at the London Agents, Messrs. GRIEVE and GRELLIER, Marble-wharf, Belvidere-road, Waterloo-bridge, or at the Encaustic Tile Works, of Messrs. F. ST. JOHN G. BARR, and Co., Worcester.

ENCAUSTIC, VENETIAN, and other PATENT TILES and MOSAIC PAVEMENTS may be purchased at MINTON and Co.'s warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge.—J. M. BLASHFIELD, Agent. The above tiles have lately been considerably reduced in price.

N.B. An assortment of plain and ornamental door furniture, slabs, and tiles for fire-places, &c.

TO BRICK AND TILE MAKERS.

THE AINSLIE PATENT TILE MACHINE COMPANY (James Smith, Esq., of Deanstone, Chairman,) invite attention to their improved Tile Machine, and to their new improved Patent Kilns for drying and burning Bricks and Tiles, by which a saving of from two-thirds to three-fourths of the fuel is effected, and all the articles are burnt equally without loss or damage. The Machines at work, and a model of the Kilns, to be seen, and all particulars to be obtained from Mr. JOHN PATON, Secretary, 193A, Piccadilly, London.—Agents wanted.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen at 27s. 6d. per ton.

COMMISSIONERS OF FINE ARTS' REPORT ON THE MEANS OF PREVENTING DAMP IN WALLS.

THE DIRECTORS of the SEYSSEL ASPHALTE COMPANY have much pleasure in recommending to the notice of Architects, Builders, and others, the application of the ASPHALTE of SEYSSEL as the only effectual means of preventing DAMP rising in WALLS.

J. FARRELL, Secretary.

Seyssel Asphalte Company's Works,
"Claridge's Patent."
Stangate Depôt, London.

The following account of its application is extracted from "The Appendix to the Commissioners of Fine Arts' Report," page 18:—

"In 1839 I superintended the construction of a house of three stories on the Lac d'Enghien. The foundation of the house is constantly in water, about 19½ inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered, at the level of the internal ground-floor, with a layer of SEYSSEL ASPHALTE, less than half an inch thick, over which coarse sand was spread.

"Since the above date no trace of damp has shewn itself round the walls of the lower story, which are for the most part painted in oil of a gray stone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted, yet the pavement of the floor, resting on the soil itself, is only about 2½ inches above the external surface of the soil, and only 19½, at the utmost, above that of the sheet of water.

"The layer of Asphalte having been broken and removed, for the purpose of inserting the sills of two doors, spots indicating the presence of damp have been since remarked at the base of the door-posts."

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHNS and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known, to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHNS and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

CHEAP ROMAN CEMENT is sold in Casks that will not contain five bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

PORTLAND CEMENT does not vegetate in damp situations, requires no colouring, is perfectly hydraulic, and resists the action of frost. The price is now considerably reduced, and the public are thereby enabled to avail themselves of these distinct advantages.

Manufactured by J. B. WHITE and SONS, of Millbank-street, Westminster; and sold at their warehouses—Earl-street, Blackfriars; Druce's Wharf, Chelsea; Bell's Wharf, Paddington; and Albion Wharf, Deptford-bridge; at Seel-street, Liverpool; and Salmon and Co.'s, Dublin.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and undestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves, that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and, being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of hall and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

CAEN STONE.

TUCKWELL'S Norway Sufferance Wharf, Greenwich.—Architects and Stone Merchants are informed, that this stone may be procured at the above Wharf in any quantity, in blocks up to 12 tons. The stone, which is exclusively the product of the Allemagne Quarries, and of the very finest quality, is consigned solely to W. TUCKWELL, who is prepared to execute orders to any extent, having a Large Stock always on the Wharf.—Orders received by, and further information with samples may be obtained of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, and of Mr. W. TUCKWELL, at the Wharf.

N.B. Cargoes shipped direct to any Port.

ARCHITECTS and SURVEYORS will find by making their selection of MARBLE CHIMNEY-PIECES at the Westminster Marble Company's Show Rooms, containing a great variety of elegant drawing and dining-room chimney-pieces, executed in a superior manner, and sold at such reduced prices to enable the public to realize a great saving, by their patent machinery. An unabated zeal will be maintained to continue the patronage so liberally shown to this establishment.

Address, Earl-street, Milbank.

N.B. Country Orders promptly attended to.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects and others that GOTHIC WINDOWS, and every other branch of Stone-work, &c., is executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.

BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

Box Chimney-pieces from 12s. upwards.

THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.

Estimates given for building generally.

BARRETT, STONE MERCHANT, 24, Wharf, Harrow Road, Paddington, respectfully informs Builders, Stone Masons, and others, that he has opened a Depôt at the Great Western Terminus for the sale of Wall's Quarry Stone. Having been established at the above place for the last twelve months, and the sale of the stone increasing so much, the Great Western Company has had the kindness to favour me with a Depôt at their Terminus. The Wall's Quarry Stone is equal to Portland for Staircases, Hall Floors, Portices, Balconies, Chimney-pieces, Coping, Window Sills, &c. The same stone being used in Gloucestershire for all the above purposes. The stone is sawn to all sizes while in the Quarry to save expense of waste and sawing in London, on which account can be rendered much cheaper, and is free from all flints, shells, and holes.—List of prices and samples sent to any part of London, carriage free, by directing all letters to No. 24, Wharf, Paddington.

P.S. Nailsworth and Paniswick Stone in Block.

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. B. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery

Best Patent Cut Clasp.

3d.	4d.	6d.	8d.	10d.	20d.
6d.	7d.	8d.	1s.	1s. 6d.	2s. per 1000.

Best Sheet Floor Brads 15s. 6d. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch 52s. per cwt.

Best Patent Sash Line.

1	2	3	4	5	6
4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.

Elliptic Stoves, 3d. per inch. Registers, 6½d., 7d., 8d. per inch.
Self-acting Kitchen Ranges with Oven and Back Boiler.

Wrought Bars and Bright Fittings.

3 ft., 3l. 3s.	3 ft. 6 in., 3l. 12s. 6d.	4 ft., 4l.

Lists of Prices had on application at the Warehouse; if by letter prepaid, inclosing postage stamp.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY & Co., WHOLESALE IRONMONGERS, and MANUFACTURERS of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen-Ranges, with back Boiler and Oven, and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
3l. 6s.	3l. 13s.	3l. 16s.	4l.	4l. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
5l.	5l. 15s.	6l. 5s.	6l. 10s.	7l.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

HENDRY and GLOVER, IRON-FOUNDERS, beg to inform their customers that they have removed their Foundry (from Smart's-buildings) to CHARLES-STREET and 108, DRURY-LANE, where they have adopted every improvement to enable them to compete successfully in quality, price, and punctuality. They have also an extensive and well-arranged stock of patterns for every description of Castings.

PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

PATENT GALVANISED TINNED IRON. (MOREWOOD AND ROGERS' PROCESS.)

ARCHITECTS, SURVEYORS, BUILDERS, and CONTRACTORS are respectfully informed they can be supplied with this invaluable metal for building purposes, of the best quality and lowest terms. It is superior in every respect to zinc, and two-thirds less price than 7lb. sheet lead for roofing, no woodwork being required, but iron rafters only, 21 inches apart, rendering the whole roof fire-proof. This mode of covering roofs is cheaper than Lead, Zinc, Tiles, or Slates. Parapet and other Gutters formed and fixed, also rain-water pipe, heads, eave gutter, baths, stove and funnel pipe, cisterns and water-closets fixed. The sheets are 6 feet long by 2 ft., 2 ft. 6 in. and 3 feet wide, and 9oz. to any required weight per foot, and can be had either plain or corrugated.

Please apply to CHARLES GELL, Junior, No. 5, Quick-set-row, New-road, St. Pancras, where references and testimonials of the highest respectability of extensive works already done can be had.

By Her Majesty's Royal Letters Patent.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED METAL.—This article was at first sold under the name of Galvanised Tin Plates, but the Patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanised Iron, and that the character of their metal has thereby sustained injury, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers in future. They therefore respectfully request purchasers to inquire for MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanised Iron has a plain zinc-like appearance, while M. and R.'s Patent Galvanized Tinned Iron has a smooth crystalline surface.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON, Patronised by the Admiralty and the Honourable Board of Ordnance, being extensively used in her Majesty's Dock-yards, at the Tower, and elsewhere, for every variety of Roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead, which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is, therefore, obviously well adapted for all the purposes above-named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

his mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.

For full Particulars apply to S. HOLLAND, 34, Grace-church-street.